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FROM BEGINNING Vol. CCXXXIX.

THE INFLUENCE OF BRAIN-POWER ON HISTORY.

My first duty to-night is a sad one. I have to refer to a great loss which this Nation and this Association have sustained. By the death of the great Englishman and great statesman who has just passed away, we members of the British Association are deprived of one of the most illustrious of our con-We have to mourn the loss of an enthusiastic student of science who conferred honor on our body by becoming its President. We recognize that as Prime Minister he was mindful of the interests of science, and that to him we owe a more general recognition on the part of the State of the value to the nation of the work of scientific men. On all these grounds you will join in the expression of respectful sympathy with Lord Salisbury's family in their great personal loss which your council has embodied this morning in a resolution of condolence.

Last year, when this friend of science ceased to be Prime Minister, he was succeeded by another statesman who also has given many proofs of his devotion to philosophical studies, and

has shown in many utterances that he has a clear understanding of the real place of science in modern civilization. We then have good grounds for hoping that the improvement in the position of science in this country which we owe to the one will also be the care of his successor, who has honored the Association by accepting the unanimous nomination of your council to be your President next year, an acceptance which adds a new lustre to this chair.

On this we may congratulate ourselves all the more because I think, although it is not generally recognized. that the century into which we have now well entered may be more momentous than any which has preceded it. and that the present history of the world is being so largely moulded by the influence of brain-power, which in these modern days has to do with natural as well as human forces and laws, that statesmen and politicians will have in the future to pay more regard to education and science, as empire-builders and empire-guarders, than they have paid in the past.

 Inaugural Address by Sir Norman Lockyer, K.C.B., LL.D., F.R.S, President of the Association, at the meeting of the British Association, ation for the Advancement of Science, at Southport, Sept. 9, 1903. The nineteenth century will ever be known as the one in which the influences of science were first fully realized in civilized communities; the scientific progress was so gigantic that it seems rash to predict that any of its successors can be more important in the life of any nation.

Disraeli, in 1873, referring to the progress up to that year, spoke as follows:-"How much has happened in these fifty years-a period more remarkable than any, I will venture to say, in the annals of mankind. I am not thinking of the rise and fall of Empires, the change of dynasties, the establishment of Governments. I am thinking of those revolutions of science which have had much more effect than any political causes, which have changed the position and prospects of mankind more than all the conquests and all the codes and all the legislators that ever lived."1

The progress of science, indeed, brings in many considerations which are momentous in relation to the life of any limited community—any one nation. One of these considerations to which attention is now being greatly drawn is that a relative decline in national wealth derived from industries must follow a relative neglect of scientific education.

It was the late Prince Consort who first emphasized this when he came here fresh from the University of Hence the "Prince Consort's Committee," which led to the foundation of the College of Chemistry and afterwards of the Science and Art Department. From that time to this the warnings of our men of science have become louder and more urgent in each succeeding year. But this is not all: the commercial output of one country in one century as compared with another is not alone in question; the acquirement of the scientific spirit and

1 "Nature," November 27, 1873, vol. ix p. 71.

a knowledge and utilization of the forces of Nature are very much further reaching in their effects on the progress and decline of nations than is generally imagined.

Britain in the middle of the last century was certainly the country which gained most by the advent of science, for she was then in full possession of those material gifts of Nature, coal and iron, the combined winning and utilization of which, in the production of machinery and in other ways, soon made her the richest country in the world, the seat and throne of invention and manufacture, as Mr. Carnegie has called her. Being the great producers and exporters of all kinds of manufactured goods, we became eventually, with our iron ships, the great carriers, and hence the supremacy of our mercantile marine and our present command of the sea.

most fundamental wrought by the early applications of science was in relation to producing and carrying power. With the winning of mineral wealth and the production of machinery in other countries, and cheap and rapid transit between nations, our superiority as depending upon our first use of vast material resources was reduced. Science, which is above all things cosmopolitan-planetary, not national-internationalizes such resources at once. In every market of the world

things of beauty, things of use, Which one fair planet can produce, Brought from under every star,

were soon to be found.

Hence the first great effect of the general progress of science was relatively to diminish the initial supremacy of Britain due to the first use of material resources, which indeed was the real source of our national wealth and place among the nations.

The unfortunate thing was that,

while the foundations of our superiority depending upon our material resources were being thus sapped by a cause which was beyond our control, our statesmen and our universities were blind leaders of the blind, and our other asset, our mental resources, which was within our control, was culpably neglected.

So little did the bulk of our statesmen know of the part science was playing in the modern world and of the real basis of the nation's activities, that they imagined political and fiscal problems to be the only matters of importance. Nor, indeed, are we very much better off to-day. In the important discussions recently raised by Mr. Chamberlain, next to nothing has been said of the effect of the progress of science on prices. The whole course of the modern world is attributed to the presence or absence of taxes on certain commodities in cer-The fact that the tain countries. great fall in the price of food-stuffs in England did not come till some thirty or forty years after the removal of the corn duty between 1847 and 1849 gives them no pause; for them new inventions, railways and steamships are negligible quantities; the vast increase in the world's wealth in free trade and protected countries alike comes merely according to them in response to some political shibboleth.

We now know, from what has occurred in other States, that if our Ministers had been more wise and our universities more numerous and efficient, our mental resources would have been developed by improvements in educational method, by the introduction of science into schools, and, more important than all the rest, by the teaching of science by experiment, observation and research, and not from books. It is because this was not done that we have fallen behind other nations in properly applying science to industry,

so that our applications of science to industry are relatively less important than they were. But this is by no means all; we have lacked the strengthening of the national life produced by fostering the scientific spirit among all classes, and along all lines of the nation's activity; many of the responsible authorities know little and care less about science; we have not learned that it is the duty of a State to organize its forces as carefully for peace as for war; that universities and other teaching centres are as important as battleships or big battalions; are, in fact, essential parts of a modern State's machinery, and as such to be equally aided and as efficiently organized to secure its future well being.

Now the objects of the British Association as laid down by its founders seventy-two years ago are "To give a stronger impulse and a more systematic direction to scientific inquiry—to promote the intercourse of those who cultivate science in different parts of the British Empire with one another and with foreign philosophers—to obtain a more general attention to the objects of science and a removal of any disadvantages of a public kind which impede its progress."

In the main, my predecessors in this chair, to which you have done me the honor to call me, have dealt, and with great benefit to science, with the objects first named.

But at a critical time like the present I find it imperative to depart from the course so generally followed by my predecessors and to deal with the last object named, for unless by some means or other we "obtain a more general attention to the objects of science and a removal of any disadvantages of a public kind which impede its progress," we shall suffer in competition with other communities in which science is more generally utilized for the purposes of the national life.

Some years ago, in discussing the relations of scientific instruction to our industries, Huxley pointed out that we were in presence of a new "struggle for existence," a struggle which, once commenced, must go on until only the fittest survives.

It is a struggle between organized species—nations—not between individuals or any class of individuals. It is, moreover, a struggle in which science and brains take the place of swords and sinews, on which depended the result of those conflicts which, up to the present, have determined the history and fate of nations. The school, the university, the laboratory and the workshop are the battlefields of this new warfare.

But it is evident that if this, or anything like it, be true, our industries cannot be involved alone; the scientific spirit, brain-power, must not be limited to the workshop if other nations utilize it in all branches of their administration and executive.

It is a question of an important change of front. It is a question of finding a new basis of stability for the Empire in face of new conditions. I am certain that those familiar with the present state of things will acknowledge that the Prince of Wales's call, "Wake up," applies quite as much to the members of the Government as it does to the leaders of industry.

What is wanted is a complete organization of the resources of the nation, so as to enable it best to face all the new problems which the progress of science, combined with the ebb and flow of population and other factors in international competition, are ever bringing before us. Every Minister, every public department, is involved, and this being so, it is the duty of the whole nation—King. Lords, and Commons—to do what is necessary to place our scientific institutions on a proper footing in order to enable us to "face the

music" whatever the future may bring. The idea that science is useful only to our industries comes from want of thought. If any one is under the impression that Britain is only suffering at present from the want of the scientific spirit among our industrial classes, and that those employed in the State service possess adequate brain-power and grip of the conditions of the modern world into which science so largely enters, let him read the report of the Royal Commission on the War in South Africa. There he will see how the whole "system" employed was, in Sir Henry Brackenbury's words applied to a part of it, "unsuited to the requirements of an Army which is maintained to enable us to make war." him read also, in the address of the president of the Society of Chemical Industry what drastic steps had to be taken by Chambers of Commerce and "a quarter of a million of working men" to get the Patent Law Amendment Act into proper shape, in spite of all the advisers and officials of the Board of Trade. Very few people realize the immense number of scientific problems the solution of which is required for the State service. nation itself is a gigantic workshop, and the more our rulers and legislators, administrators and executive officers possess the scientific spirit, the more the rule of thumb is replaced in the State service by scientific methods, the more able shall we be, thus armed at all points, to compete successfully with other countries along all lines of national as well as of commercial activity.

It is obvious that the power of a nation for war, in men and arms and ships, is one thing; its power in the peace struggles to which I have referred is another; in the latter, the source and standard of national efficiency are entirely changed. To meet war conditions, there must be equality or superiority in battleships and army corps. To meet the new peace conditions, there must be equality or superiority in universities, scientific organization and everything which conduces to greater brain power.

The present condition of the nation, so far as its industries are concerned, is as well known, not only to the Prime Minister, but to other political leaders in and out of the Cabinet, as it is to you and to me. Let me refer to two speeches delivered by Lord Rosebery and Mr. Chamberlain on two successive days in January, 1901.

Lord Rosebery spoke as follows:-" . . . The war I regard with apprehension is the war of trade which is unmistakably upon us. . . . When I look round me I cannot blind my eyes to the fact that so far as we can predict anything of the twentieth century on which we have now entered, it is that it will be one of acutest international conflict in point of trade. We were the first nation of the modern world to discover that trade was an absolute necessity. For that we were nicknamed a nation of shopkeepers; but now every nation wishes to be a nation of shopkeepers too, and I am bound to say that when we look at the character of some of these nations, and when we look at the intelligence of their preparations, we may well feel that it behooves us not to fear, but to gird up our loins in preparation for what is before us."

Mr. Chamberlain's views were stated in the following words:—

"I do not think it is necessary for me to say anything as to the urgency and necessity of scientific training. . . . It is not too much to say that the existence of this country, as the great commercial nation, depends upon it. . . . It depends very much upon what we are doing now, at the beginning of the twentieth century, whether at its end we shall continue to maintain our su-

premacy or even equality with our great commercial and manufacturing rivals."

All this refers to our industries. We are suffering because trade no longer follows the flag as in the old days, but because trade follows the brains, and our manufacturers are too apt to be careless in securing them. In one chemical establishment in Germany, 400 doctors of science, the best the universities there can turn out, have been employed at different times in late years. In the United States the most successful students in the higher teaching centres are snapped up the moment they have finished their course of training, and put into charge of large concerns, so that the idea has got abroad that youth is the password of success in American industry. It has been forgotten that the latest product of the highest scientific education must necessarily be young, and that it is the training and not the age which determines his employment. In Britain, on the other hand, apprentices who can pay high premiums are too often preferred to those who are well educated, and the old rule-of-thumb processes are preferred to new developments-a conservatism too often depending upon the master's own want of knowledge.

I should not be doing my duty if I did not point out that the defeat of our industries one after another, concerning which both Lord Rosebery and Mr. Chamberlain express their anxiety, is by no means the only thing we have to consider. The matter is not one which concerns our industrial classes only. for knowledge must be pursued for its own sake, and since the full life of a nation with a constantly increasing complexity, not only of industrial, but of high national aims, depends upon the universal presence of the scientific spirit-in other words, brain-powerour whole national life is involved.

The present awakening in relation to

the nation's real needs is largely due to the warnings of men of science. But Mr. Balfour's terrible Manchester picture of our present educational condition² shows that the warning which has been going on now for more than fifty years has not been forcible enough; but if my contention that other reorganizations besides that of our education are needed is well founded, and if men of science are to act the part of good citizens in taking their share in endeavoring to bring about a better state of things. question arises, has the neglect of their warnings so far been due to the way in which these have been given?

Lord Rosebery, in the address to a Chamber of Commerce from which I have already quoted, expressed his opinion that such bodies do not exercise so much influence as might be expected of them. But if commercial men do not use all the power their organization provides, do they not by having built up such an organization put us students of science to shame, who are still the most disorganized members of the community?

Here, in my opinion, we have the real reason why the scientific needs of the nation fail to command the attention either of the public or of successive Governments. At present, appeals on this or on that behalf are the appeals of individuals; science has no collective voice on the larger national questions; there is no organized body which formulates her demands.

During many years it has been part of my duty to consider such matters, and I have been driven to the conclusion that our great crying need is to bring about an organization of men of science and all interested in science, similar to those which prove so effective in other branches of human activity. For the last few years I have dreamt of a Chamber, Guild, League, call it what you will, with a wide and large membership, which should give us what, in my opinion, is so urgently needed. Quite recently I sketched out such an organization, but what was my astonishment to find that I had been forestalled, and by the founders of the British Association!

At the commencement of this address I pointed out that one of the objects of the Association, as stated by its founders, was "to obtain a more general attention to the objects of science and a removal of any disadvantages of a public kind which impede its progress."

Everyone connected with the British Association from its beginning may be congratulated upon the magnificent way in which the other objects of the Association have been carried out, but as one familiar with the Association for the last forty years, I cannot but think that the object to which I have specially referred has been too much overshadowed by the work done in connection with the others.

A careful study of the early history of the Association leads me to the belief that the function I am now dwelling on was strongly in the minds of the founders; but be this as it may, let me point out how admirably the organization is framed to enable men of science to influence public opinion and so to bring pressure to bear upon Governments which follow public opinion. (1) Unlike all the other chief metropolitan societies, its outlook is not limited to any branch or branches of science. (2) We have a wide and numerous fellowship, including both the leaders and the lovers of science, in

^{2 &}quot;The existing educational system of this country is chaotic, is ineffectual, is utterly behind the age, makes us the laughing-stock of every advanced nation in Europe and America.

puts us behind, not only our American cousins, but the German and the Frenchman and the Italian."—"Times," October 15, 1902.

which all branches of science are and always have been included with the utmost catholicity—a condition which renders strong committees possible on any subject. (3) An annual meeting at a time when people can pay attention to the deliberations, and when the newspapers can print reports. (4) The possibility of beating up recruits and establishing local committees in different localities, even in the King's dominions beyond the seas, since the place of meeting changes from year to year, and is not limited to these islands.

We not only, then, have a scientific parliament competent to deal with all matters, including those of national importance, relating to science, but machinery for influencing all new councils and committees dealing with local matters, the functions of which are daily becoming more important.

The machinery might consist of our corresponding societies. We already have affiliated to us seventy societies with a membership of 25,000; were this number increased so as to include every scientific society in the Empire, metropolitan and provincial, we might eventually hope for a membership of half a million.

I am glad to know that the Council is fully alive to the importance of giving a greater impetus to the work of the corresponding societies. During this year a committee was appointed to deal with the question; and later still, after this committee had reported, a conference was held between this committee and the corresponding societies committee to consider the suggestions made, some of which will be gathered from the following extract:—

"In view of the increasing importance of science to the nation at large, your committee desire to call the attention of the Council to the fact that in the corresponding societies the British Association has gathered in the various centres represented by these societies

practically all the scientific activity of the provinces. The number of members and associates at present on the list of the corresponding societies approaches 25,000, and no organization is in existence anywhere in the country better adapted than the British Association for stimulating, encouraging and coordinating all the work being carried on by the seventy societies at present enrolled. Your committee are of opinion that further encouragement should be given to these societies and their individual working members by every means within the power of the association; and with the object of keeping the corresponding societies in more permanent touch with the Association they suggest that an official invitation on behalf of the Council be addressed to the societies through the corresponding societies committee asking them to appoint standing British Association sub-committees, elected by themselves with the object of dealing with all those subjects of investigation common to their societies and to the British Association committees, and to look after the general interests of science and scientific education throughout the provinces and provincial centres. . . .

"Your committee desire to lay special emphasis on the necessity for the extension of the scientific activity of the corresponding societies and the expert knowledge of many of their members in the direction of scientific education. They are of opinion that immense benefit would accrue to the country if the corresponding societies would keep this requirement especially in view with the object of securing adequate representation for scientific education on the Education Committees now being appointed under the new Act. The educational section of the Association having been but recently added, the corresponding societies have as yet not had much opportunity for taking part

in this branch of the Association's work; and in view of the reorganization in education now going on all over the country your committee are of opinion that no more opportune time is likely to occur for the influence of scientific organizations to make itself felt as a real factor in national education. . . ."

I believe that if these suggestions or anything like them-for some better way may be found on inquiry-are accepted, great good to science throughout the Empire will come. Rest assured that sooner or later such a guild will be formed because it is needed. It is for you to say whether it shall be, or form part of, the British Association. We in this Empire certainly need to organize science as much as in Germany they find the need to organize a navy. The German Navy League, which has branches even in our Colonies, already has a membership of 630,000, and its income is nearly 20,000l. a year. A British Science League of 500,000 with a sixpenny subscription would give us 12,000l. a year, quite enough to begin with.

I for one believe that the British Association would be a vast gainer by such an expansion of one of its existing functions. Increased authority and prestige would follow its increased The meetings would possess utility. a new interest; there would be new subjects for reports; missionary work less needed than formerly would be replaced by efforts much more suited to the real wants of the time. magnificent, strong and complicated organization would become a living force, working throughout the year, instead of practically lying idle, useless and rusting for 51 weeks out of the 52 so far as its close association with its members is concerned.

If this suggestion in any way commends itself to you, then when you begin your work in your sections or general committee see to it that a body is appointed to inquire how the thing Remember that the can be done. British Association will be as much weakened by the creation of a new body to do the work I have shown to have been in the minds of its founders as I believe it will be strengthened by becoming completely effective in every one of the directions they indicated, and for which effectiveness we their successors are indeed responsible. The time is appropriate for such a reinforcement of one of the wings of our organization, for we have recently included Education among our sections.

There is another matter I should like to see referred to the committee I have spoken of, if it please you to appoint it. The British Association, which as I have already pointed out is now the chief body in the Empire which deals with the totality of science, is, I believe, the only organization of any consequence which is without a charter, and which has not His Majesty the King as patron.

I suppose it is my duty after I have suggested the need of organization to tell you my personal opinion as to the matters where we suffer most in consequence of our lack of organization at the present time.

Our position as a nation, our success as merchants, are in peril chieflydealing with preventable causes-because of our lack of completely efficient universities, and our neglect of research. This research has a double A professor who is not learning cannot teach properly or arouse enthusiasm in his students; while a student of anything who is unfamiliar with research methods, and without that training which research brings, will not be in the best position to apply his knowledge in after life. neglect of research comes imperfect education and a small output of new applications and new knowledge to reinvigorate our industries. From imperfect education comes the unconcern touching scientific matters, and the too frequent absence of the scientific spirit, in the nation generally from the Court to the parish council.

I propose to deal as briefly as I can with each of these points.

I have shown that so far as our industries are concerned, the cause of our failure has been run to earth; it is fully recognized that it arises from the insufficiency of our universities both in numbers and efficiency, so that not only our captains of industry, but those employed on the nation's work generally, do not secure a training similar to that afforded by other nations. additional endowment of primary, secondary or technical instruction will mend matters. This is not merely the opinion of men of science; our great towns know it, our Ministers know it.

It is sufficient for me to quote Mr. Chamberlain:—

"It is not everyone who can, by any possibility, go forward into the higher spheres of education; but it is from those who do that we have to look for the men who, in the future, will carry high the flag of this country in commercial, scientific and economic competition with other nations. At the present moment, I believe there is nothing more important than to supply the deficiencies which separate us from those with whom we are in the closest competition. In Germany, in America, in our own colony of Canada and in Australia, the higher education of the people has more support from the Government, is carried further, than it is here in the old country; and the result is that in every profession, in every industry, you find the places taken by men and by women who have had a university education. And I would like to see the time in this country when no man should have a chance for any occupation of the better kind, either in

our factories, our workshops or our counting-houses, who could not show proof that, in the course of his university career, he had deserved the position that was offered to him. What is it that makes a country? Of course you may say, and you would be quite right, 'The general qualities of the people, their resolution, their intelligence, their pertinacity, and many other good qualities.' Yes; but that is not all, and it is not the main creative feature of a great nation. The greatness of a nation is made by its greatest It is those we want to educate. It is to those who are able to go, it may be, from the very lowest steps in the ladder, to men who are able to devote their time to higher education, that we have to look to continue the position which we now occupy as, at all events, one of the greatest nations on the face of the earth. And, feeling as I do on these subjects, you will not be surprised if I say that I think the time is coming when Governments will give more attention to this matter, and perhaps find a little more money to forward its interests" (Times, November 6, 1902).

Our conception of a university has University education is no changed. longer regarded as the luxury of the rich which concerns only those who can afford to pay heavily for it. Prime Minister in a recent speech, while properly pointing out that the collective effect of our public and secondary schools upon British character cannot be overrated, frankly acknowledged that the boys of seventeen or eighteen who have to be educated in them "do not care a farthing about the world they live in except in so far as it concerns the cricket-field or the football field or the river." On this ground they are not to be taught science, and hence, when they proceed to the university, their curriculum is limited to subjects which were better taught be-

fore the modern world existed, or even But the science Galileo was born. which these young gentlemen neglect, with the full approval of their teachers, on their way through the school and the university to politics, the Civil Service, or the management of commercial concerns, is now one of the great necessities of a nation, and our universities must become as much the insurers of the future progress as battleships are the insurers of the present power of States. In other words, university competition between States is now as potent as competition in building battleships, and it is on this ground that our university conditions become of the highest national concern and therefore have to be referred to here, and all the more because our industries are not alone in question.

Chief among the causes which have brought us to the terrible condition of inferiority as compared with other nations in which we find ourselves are our carelessness in the matter of education and our false notions of the limitations of State functions in relation to the conditions of modern civilization.

Time was when the Navy was largely a matter of private and local effort. William the Conqueror gave privileges to the Cinque Ports on the condition that they furnished fifty-two ships when wanted. In the time of Edward III., of 730 sail engaged in the siege of Calais, 705 were "people's ships." All this has passed away; for our first line of defence we no longer depend on private and local effort.

Time was when not a penny was spent by the State on elementary education. Again, we no longer depend upon private and local effort. The Navy and primary education are now recognized as properly calling upon the public for the necessary financial support. But when we pass from primary to university education, instead

of State endowment we find State neglect; we are in a region where it is nobody's business to see that anything is done.

We in Great Britain have thirteen universities competing with 134 State and privately endowed in the United States and twenty-two State endowed in Germany. I leave other countries out of consideration for lack of time, and I omit all reference to higher institutions for technical training, of which Germany alone possesses nine of university rank, because they are less important; they instruct rather than educate, and our want is education. The German State gives to one university more than the British Government allows to all the universities and university colleges in England, Ireland, Scotland, and Wales put together. These are the conditions which regulate the production of brain-power in the United States, Germany, and Britain, respectively, and the excuse of the Government is that this is a matter for private effort. Do not our Ministers of State know that other civilized countries grant efficient State aid, and further, that private effort has provided in Great Britain less than ten per cent. of the sum thus furnished in the United States in addition to State aid? Are they content that we should go under in the great struggle of the modern world because the Ministries of other States are wiser, and because the individual citizens of another country are more generous, than our own?

If we grant that there was some excuse for the State's neglect so long as the higher teaching dealt only with words, and books alone had to be provided (for the streets of London and Paris have been used as class rooms at a pinch), it must not be forgotten that during the last hundred years not only has knowledge been enormously increased, but things have replaced words, and fully equipped laboratories

must take the place of books and class rooms if university training worthy of the name is to be provided. There is much more difference in size and kind between an old and new university than there is between the old caravel and a modern battleship, and the endowments must follow suit.

What are the facts relating to private endowment in this country? In spite of the munificence displayed by a small number of individuals in some localities, the truth must be spoken. depending in our country upon this form of endowment, we are trusting to a broken reed. If we take the twelve English university colleges, the forerunners of universities unless we are to perish from lack of knowledge, we find that private effort during sixty years has found less than 4,000,000l., that is, 2,000,000l. for buildings and 40,000l. a This gives us an averyear income. age of 166,000l. for buildings and 3300l. for yearly income.

What is the scale of private effort we have to compete with in regard to the American universities?

In the United States, during the last few years, universities and colleges have received more than 40,000,000*l*. from this source alone; private effort supplied nearly 7,000,000*l*. in the years 1898–1900.

Next consider the amount of State aid to universities afforded in Germany. The buildings of the new University of Strassburg have already cost nearly a million; that is, about as much as has yet been found by private effort for buildings in Manchester, Liverpool, Birmingham, Bristol, Newcastle and Sheffield. The Government annual endowment of the same German university is more than 49,0001.

This is what private endowment does for us in England, against State endowment in Germany.

But the State does really concede the principle; its present contribution to

our Universities and colleges amounts to 155,600l, a year; no capital sum, however, is taken for buildings. The State endowment of the University of Berlin in 1891-2 amounted to 168,777l.

When, then, we consider the large endowments of university education both in the United States and Germany, it is obvious that State aid only can make any valid competition possible with either. The more we study the facts, the more statistics are gone into, the more do we find that we, to a large extent, lack both of the sources of endowment upon one or other or both of which other nations depend. We are between two stools, and the prospect is hopeless without some drastic changes. And first among these, if we intend to get out of the present slough of despond, must be the giving up of the idea of relying upon private effort.

That we lose most where the State does least is known to Mr. Chamberlain, for in his speech, to which I have referred, on the University of Birmingham, he said:—"As the importance of the aim we are pursuing becomes more and more impressed upon the minds of the people, we may find that we shall be more generously treated by the State."

Later still, on the occasion of a visit to University College School, Mr. Chamberlain spoke as follows:—

"When we are spending, as we are, many millions—I think it is 13,000,000l.—a year on primary education, it certainly seems as if we might add a little more, even a few tens of thousands, to what we give to University and secondary education" (Times, November 6, 1902).

To compete on equal grounds with other nations we must have more universities. But this is not all—we want a far better endowment of all the existing ones, not forgetting better opportunities for research on the part of both professors and students. Another crying need is that of more professors and better pay. Another is the reduction of fees; they should be reduced to the level in those countries which are competing with us, to, say, one-fifth of their present rates, so as to enable more students in the secondary and technical schools to complete their education.

In all these ways, facilities would be afforded for providing the highest instruction to a much greater number of students. At present there are almost as many professors and instructors in the universities and colleges of the United States as there are day students in the universities and colleges of the United Kingdom.

Men of science, our leaders of industry, and the chiefs of our political parties all agree that our present want of higher education—in other words, properly equipped universities—is heavily handicapping us in the present race for commercial supremacy, because it provides a relatively inferior brain-power which is leading to a relatively reduced national income.

The facts show that in this country we cannot depend upon private effort to put matters right. How about local effort?

Anyone who studies the statistics of modern municipalities will see that it is impossible for them to raise rates for the building and upkeep of universities.

The buildings of the most modern university in Germany have cost a million. For upkeep the yearly sums found, chiefly by the State, for German universities of different grades, taking the incomes of seven out of the twenty-two universities as examples, are:—

		£ .
1st Class	Berlin	130,000
2nd Class	Bonn	56,000

		£
3rd Class	Konigsberg Strassburg	48,000
4th Class	Heidelberg Marburg	37,000

Thus, if Leeds, which is to have a university, is content with the 4th class German standard, a rate must be levied of 7d. in the pound for yearly expenses, independent of all buildings. But the facts are that our towns are already at the breaking strain. During the last fifty years, in spite of enormous increases in rateable values, the rates have gone up from about 2s. to about 7s. in the pound for real local purposes. But no university can be a merely local institution.

What, then, is to be done? Fortunately, we have a precedent admirably in point, the consideration of which may help us to answer this question.

I have pointed out that in old days our Navy was chiefly provided by local and private effort. Fortunately for us, those days have passed away; but some twenty years ago, in spite of a large expenditure, it began to be felt by those who knew, that in consequence of the increase of foreign navies, our sea-power was threatened, as now, in consequence of the increase of foreign universities, our brain-power is threatened.

The nation slowly woke up to find that its enormous commerce was no longer insured at sea, that in relation to foreign navies our own had been suffered to dwindle to such an extent that it was no longer capable of doing the duty which the nation expected of it even in times of peace. At first, this revelation was received with a shrug of incredulity, and the peace-at-any-price party denied that anything was needed; but a great teacher arose; as the facts were inquired into the suspicion changed into an alarm; men of

³ Captain Mahan, of the U. S. Navy, whose book, "On the Influence of Sea-power on History," has suggested the title of my address.

all parties saw that something must be done. Later, the nation was thoroughly aroused, and with an universal agreement the principle was laid down that, cost what it might to enforce our seapower, our Navy must be made and maintained of a strength greater than those of any two possibly contending Powers. After establishing this principle, the next thing to do was to give effect to it. What did the nation do after full discussion and enquiry? Bill was brought in in 1888, and a sum of 21,500,000l, was voted in order, during the next five years, to inaugurate a large ship-building program, so that Britain and Britain's commerce might be guarded on the high seas in any

Since then we have spent 120,000,000l, on new ships, and this year we spend still more millions on still more new ships. If these prove insufficient to safeguard our sea-power, there is no doubt that the nation will increase them, and I have not heard that anybody has suggested an appeal to private effort.

How, then, do we stand with regard to universities, recognizing them as the chief producers of brain-power and therefore the equivalents of battleships in relation to sea-power? their numbers come up to the standard established by the Admiralty principle to which I have referred? Let us attempt to get a rough-and-ready estimate of our educational position by counting universities as the Admiralty counts battleships. I say rough and ready because we have other helps to greater brain-power to consider besides universities, as the Admiralty has other ships to consider besides ironclads.

In the first place, let us inquire if they are equal in number to those of any two nations commercially competing with us.

⁴These are Oxford, Cambridge, Durham, Victoria, Wales, Birmingham, London, St. Andrews,

In the United Kingdom, we had until quite recently thirteen. Of these, one is only three years old as a teaching university and another is still merely an examining board.

In Germany there are twenty-two universities; in France, under recent legislation, fifteen; in Italy twenty-one. It is difficult to give the number in the United States, because it is clear, from the tables given in the Report of the Commissioner of Education, that some colleges are more important than some universities, and both give the degree of Ph.D. But of universities in title we have 134. Among these, there are forty-six with more than fifty professors and instructors, and thirteen with more than 150. I will take that figure.

Suppose we consider the United States and Germany, our chief commercial competitors, and apply the Admiralty principle. We should require, allowing for population, eight additional universities at the very lowest estimate.

We see, then, that instead of having universities equalling in number those of two of our chief competitors together, they are by no means equal to those of either of them singly.

After this statement of the facts, anyone who has belief in the importance of higher education will have no difficulty in understanding the origin of the present condition of British industry and its constant decline, first in one direction and then in another, since the tremendous efforts made in the United States and Germany began to take effect.

If, indeed, there be anything wrong about the comparison, the error can only arise from one of two sources; either the Admiralty is thoughtlessly and wastefully spending money, or there is no connection whatever between the higher intelligence and the

Glasgow, Aberdeen, Edinburgh, Dublin, and Royal University.

prosperity of a nation. I have already referred to the views of Mr. Chamberlain and Lord Rosebery on this point; we know what Mr. Chamberlain has done at Birmingham; we know the strenuous efforts made by the commercial leaders of Manchester and Liverpool; we know, also, the opinion of men of science.

If while we spend so freely to maintain our sea-power our export of manufactured articles is relatively reduced because our competitors beat us in the markets of the world, what is the end of the vista thus opened up to us? A Navy growing stronger every year and requiring larger votes to guard our commerce and communications, and a vanishing quantity of commerce to guard—a reduced national income to meet an increasing taxation!

The pity is that our Government has considered sea-power alone; that while so completely guarding our commerce, it has given no thought to one of the main conditions on which its production and increase depend: a glance could have shown that other countries were building universities even faster than they were building battleships; were, in fact, considering brain-power first and sea-power afterwards.

Surely it is my duty as your President to point out the danger ahead if such ignoring of the true situation should be allowed to continue. May I express a hope that at last, in Mr. Chamberlain's words, "the time is coming when Governments will give more attention to this matter"?

The comparison shows that we want eight new universities, some of which, of course, will be colleges promoted to university rank and fitted to carry on university work. Three of them are already named: Manchester, Liverpool, Leeds.

Let us take this number and deal with it on the battleship condition, although a modern university on American or German models will cost more to build than a battleship.

If our present university shortage be dealt with on battleship conditions, to correct it we should expend at least 8,000,000l. for new construction, and for the pay-sheet we should have to provide (8x50,000l.) 400,000l. yearly for personnel and upkeep, for it is of no use to build either ships or universities without manning them. Let us say, roughly, capitalizing the yearly payment at 2½ per cent., 24,000,000l.

At this stage, it is important to inquire whether this sum, arrived at by analogy merely, has any relation to our real university needs.

I have spent a year in making inquiries, as full as I could make them, of friends conversant with the real present needs of each of the universities old and new. I have obtained statistics which would fill a volume, and personally I believe that this sum at least is required to bring our university system up to anything like the level which is insisted upon both in the United States and in Germany. Even Oxford, our oldest university, will still continue to be a mere bundle of colleges, unless three millions are provided to enable the university properly so-called to take her place among the sisters of the modern world; and Sir Oliver Lodge, the principal of our very youngest university, Birmingham, has shown in detail how five millions can be usefully and properly applied in that one locality, to utilize for the good of the nation the enthusiasm and scientific capacity which are only waiting for adequate opportunity of development.

How is this money to be raised? I reply without hesitation, duplicate the Navy Bill of 1888-9; do at once for brain-power what we so successfully did then for sea-power.

Let 24,000,000l. be set apart from one asset, our national wealth, to increase

the other, brain-power. Let it be assigned and borrowed as it is wanted; there will be a capital sum for new buildings to be erected in the next five or ten years, the interest of the remainder to go towards increased annual endowments.

There need be no difficulty about allocating money to the various institutions. Let each university make up its mind as to which rank of the German universities it wishes to emulate. When this claim has been agreed to, the sums necessary to provide the buildings and teaching staff of that class of university should be granted without demur.

It is the case of battleships over again, and money need not be spent more freely in one case than in the other.

Let me at once say that this sum is not to be regarded as practically gone when spent, as in the case of a short-lived ironclad. It is a loan which will bear a high rate of interest. This is not my opinion merely; it is the opinion of those concerned in great industrial enterprises and fully alive to the origin and effects of the present condition of things.

I have been careful to point out that the statement that our industries are suffering from our relative neglect of science does not rest on my authority. But if this be true, then if our annual production is less by only two millions than it might have been, having two millions less to divide would be equivalent to our having forty or fifty millions less capital than we should have had if we had been more scientific.

Sir John Brunner, in a speech connected with the Liverpool School of Tropical Medicine, stated recently that if we as a nation were now to borrow ten millions of money in order to help science by putting up buildings and endowing professors, we should get the money back in the course of a generation a hundredfold. He added that there was no better investment for a business man than the encouragement of science, and that every penny he possessed had come from the application of science to commerce.

According to Sir Robert Giffen, the United Kingdom as a going concern was in 1901 worth 16,000,000,0001.

Were we to put aside 24,000,000*l*. for gradually organizing, building and endowing new universities, and making the existing ones more efficient, we should still be worth 15,976,000,000*l*., a property well worth defending by all the means, and chief among these brain-power, we can command.

If it be held that this, or anything like it, is too great a price to pay for correcting past carelessness or stupidity, the reply is that the 120,000,000l. recently spent on the Navy, a sum five times greater, has been spent to correct a sleepy blunder, not one whit more inimical to the future welfare of our country than that which has brought about our present educational position. We had not sufficiently recognized what other nations had done in the way of ship building, just as until now we have not recognized what they have been doing in university building.

Further, I am told that the sum of 24,000,000*l*. is less than half the amount by which Germany is yearly enriched by having improved upon our chemical industries, owing to our lack of scientific training. Many other industries have been attacked in the same way since, but taking this one instance alone, if we had spent this money fifty years ago, when the Prince Consort first called attention to our backwardness, the nation would now be much richer than it is, and would have much less to fear from competition.

Suppose we were to set about putting our educational house in order, so as to secure a higher quality and greater quantity of brain-power, it would not be the first time in history that this has been done. Both Prussia after Jena and France after Sedan acted on the view:—

When land is gone and money spent, Then learning is most excellent.

After Jena, which left Prussia a "bleeding and lacerated mass," the King and his wise counsellors, among them men who had gained knowledge from Kant, determined, as they put it, "to supply the loss of territory by intellectual effort."

What did they do? In spite of universal poverty, three universities, to say nothing of observatories and other institutions, were at once founded, secondary education was developed, and in a few years the mental resources were so well looked after that Lord Palmerston defined the kingdom in question as "a country of damned professors."

After Sedan, a battle, as Moltke told us, "won by the schoolmaster," France made even more strenuous efforts. The old university of France, with its "academies" in various places, was replaced by fifteen independent universities, in all of which are faculties of letters, sciences, law and medicine.

The development of the University of Paris has been truly marvellous. In 1897-8 there were 12,000 students, and the cost was 200,000*l*. a year.

But even more wonderful than these examples is the "intellectual effort" made by Japan, not after a war, but to prepare for one.

The question is, shall we wait for a disaster and then imitate Prussia and France? or shall we follow Japan, and thoroughly prepare by "intellectual effort" for the industrial struggle which lies before us? Such an effort seems to me to be the first thing any national or imperial scientific organization should endeavor to bring about.

When dealing with our universities, I referred to the importance of research, as it is now generally acknowledged to be the most powerful engine of education that we possess. But education after all is but a means to the end which, from the national point of view, is the application of old and the production of new knowledge.

Its national importance apart from education is now so generally recognized that in all civilized nations except our own means of research are being daily more amply provided for all students after they have passed through their university career, and more than this, for all who can increase the country's renown or prosperity by the making of new knowledge upon which not only commercial progress, but all intellectual advance must depend.

I am so anxious that my statement of our pressing, and indeed imperative, needs in this direction should not be considered as resting upon the possibly interested opinion of a student of science merely, that I must trouble you with still more quotations.

Listen to Mr. Balfour:-

"I do not believe that any man who looks round the equipment of our universities or medical schools, or other places of education, can honestly say in his heart that we have done enough to equip research with all the costly armory which research must have in these modern days. We, the richest country in the world, lag behind Germany, France, Switzerland and Italy. Is it not disgraceful? Are we too poor or are we too stupid?"

It is imagined by many who have given no thought to the matter that this research should be closely allied with some application of science being utilized at the time. Nothing could be further from the truth; nothing could be more unwise than such a limitation.

^{5 &}quot;Nature," May 30, 1901.

Surely all the laws of Nature will be ultimately of service, and therefore there is much more future help to be got from a study of the unknown and the unused than we can hope to obtain by continuing the study of that which is pretty well known and utilized already. It was a King of France, Louis XIV., who first commended the study of the même inutile. The history of modern science shows us more and more as the years roll on the necessity and advantage of such studies, and therefore the importance of properly endowing them, for the production of new knowledge is a costly and unremunerative pursuit.

Years ago we had Faraday apparently wasting his energies and time in playing with needles; electricity now fills the world. To-day men of science in all lands are studying the emanations of radium; no research could be more abstract; but who knows what advance in human thought may follow or what gigantic world-transforming superstructure may eventually be raised on the minute foundation they are laying?

If we so organize our teaching forces that we can use them at all stages from the gutter to the university to sift out for us potential Faradays—to utilize the mental products which otherwise would be wasted—it is only by enabling such men to continue their learning after their teaching is over that we shall be able to secure the greatest advantage which any educational system can afford.

It is now more than thirty years ago that my attention was specially drawn to this question of the endowment of research, first by conversations with M. Dumas, the permanent secretary of the Academy of Sciences, who honored me by his friendship, and secondly by my association with Sir Benjamin Brodie and Dr. Appleton in their endeavors to call attention to the matter in this

country. At that time a general scheme of endowment suggested by Dumas was being carried out by Duruy. This took the form of the "Ecole speciale des Hautes Etudes"; it was what our fellowship system was meant to be—an endowment of the research of post-graduate students in each seat of learning. The French effort did not begin then.

I may here tell, as it was told me by Dumas, the story of Léon Foucault, whose many discoveries shed a glory on France, and revived French industry in many directions.* In 1851, when Prince Napoleon was President of the Republic, he sent for Dumas and some of his colleagues and told them that during his stay in England, and afterwards in his study of the Great Exhibition of that year, he had found there a greater industrial development than in France, and more applications of science, adding that he wished to know how such a state of things could be at once remedied. The answer was that new applications depended upon new knowledge, and that therefore the most direct and immediate way was to find and encourage men who were likely by research in pure science to produce this new knowledge. Prince President at once asked for names; that of Léon Foucault was the only one mentioned during the first interview.

Some time afterwards, to be exact at about 11 in the morning of December 2, Dumas's servant informed him that there was a gentleman in the hall named Foucault who wished to see him, and he added that he appeared to be very ill. When shown into the study, Foucault was too agitated to speak, and was blind with tears. His reply to Dumas's soothing questions was to take from his pockets two rolls of bank notes amounting to 200,000 francs and place them on the table.

See "Proc. R.S." vol. xvii., p. lxxxiii.

Finally, he was able to say that he had been with the Prince President since 8 o'clock that morning discussing the possible improvement of French science and industry, and that Napoleon had finally given him the money requesting him to do all in his power to aid the State. Foucault ended by saying that on realizing the greatness of the task thus imposed upon him, his fears and feelings had got the better of him, for the responsibility seemed more than he could bear.

The movement in England to which I have referred began in 1872, when a society for the organization of academical study was formed in connection with the inquiry into the revenues of Oxford and Cambridge, and there was a famous meeting at the Freemasons' Tavern, Mark Pattison being in the Brodie, Rolleston, Carpenter, Burdon-Sanderson, were among the speakers, and the first resolution carried was, "That to have a class of men whose lives are devoted to research is a national object." The movement died in consequence of the want of sympathy of the university authorities.8

In the year 1874 the subject was inquired into by the late Duke of Devonshire's Commission, and after taking much remarkable evidence, including that of Lord Salisbury, the Commission recommended to the Government that the then grant of 1000l. which was expended, by a committee appointed by the Royal Society, on instruments needed in researches carried on by private individuals should be increased, so that personal grants should be made. This recommendation was accepted and acted on; the grant was increased to 4000l., and finally other societies were

associated with the Royal Society in its administration. The Committee, however, was timorous, possibly owing to the apathy of the universities and the general carelessness on such matters, and only one personal grant was made; the whole conception fell through.

Meantime, however, opinion has become more educated and alive to the extreme importance of research to the nation, and in 1891 a suggestion was made to the Royal Commission which administers the proceeds of the 1851 Exhibition that a sum of about 6000l. a year available for scholarships should be employed in encouraging post-graduate research throughout the whole Empire. As what happened is told in the Memoirs of Lord Playfair, it is not indiscreet in me to state that when I proposed this new form of the endowment of research, it would not have surprised me if the suggestion had been declined. It was carried through by Lord Playfair's enthusiastic support. This system has been at work ever since, and the good that has been done by it is now generally conceded.

It is a supreme satisfaction to me to know that in this present year of grace the national importance of the study of the *même inutile* is more generally recognized than it was during the times to which I have referred in my brief survey, and, indeed, we students are fortunate in having on our side in this matter two members of His Majesty's Government, who two years ago spoke with no uncertain sound upon this matter.

"Do we lack the imagination required to show what these apparently remote and abstract studies do for the happiness of mankind? We can appreciate

⁷ In order to show how history is written, what actually happened on a fateful morning may be compared with the account given by Kinglake:—"Prince Louis rode home and went in out of sight. Then for the most part he remained close shut up in the Elysee. There, in an inner room, still decked in red trousers, but

with his back to the daylight, they say he sat bent over a fireplace for hours and hours together, resting his elbows on his knees, and burying his face in his hands" ("Crimean War," i. p. 245).

[•] See "Nature," November and December, 1372.

that which obviously and directly ministers to human advancement and felicity, but seem, somehow or another to be deficient in that higher form of imagination, in that longer sight, which sees in studies which have no obvious, necessary, or immediate result the foundation of the knowledge which shall give far greater happiness to mankind than any immediate, material, industrial advancement can possibly do; and I fear, and greatly fear, that, lacking that imagination, we have allowed ourselves to lag in the glorious race run now by civilized countries in pursuit of knowledge, and we have permitted ourselves so far to too large an extent to depend upon others for those additions to our knowledge which surely we might have made for ourselves."-Mr. Balfour, Nature, May 30, 1901.

"I would remind you that all history shows that progress—national progress of every kind—depends upon certain individuals rather than upon the mass. Whether you take religion, or literature, or political government, or art, or commerce, the new ideas, the great steps, have been made by individuals of superior quality and genius who have, as it were, dragged the mass of the nation up one step to a higher level.

So it must be in regard to material progress. The position of the nation to-day is due to the efforts of men like Watt and Arkwright, or, in our own time, to the Armstrongs, the Whitworths, the Kelvins, and the Siemenses. These are the men who, by their discoveries, by their remarkable genius, have produced the ideas upon which others have acted and which have permeated the whole mass of the nation and affected the whole of its proceedings. Therefore what we have to do, and this is our special task and object, is to produce more of these great men."-

Mr. Chamberlain, Times, January 18, 1901.

I finally come to the political importance of research. A country's research is as important in the long run as its battleships. The most eloquent teaching as to its national value we owe to Mr. Carnegie, for he has given the sum of 2,000,000l. to found a system of endowments, his chief purpose being, in his own words, "to secure if possible for the United States of America leadership in the domain of discovery and the utilization of new forces for the benefit of man."

Here is a distinct challege to Britain. Judging by experience in this country, in spite of the magnificent endowment of research by Mond and Lord Iveagh, the only sources of possible competition in the British interest is the State, which certainly could not put the 1-8000 part of the accumulated wealth of the country to better use, for without such help both our universities and our battleships will become of rapidly dwindling importance.

It is on this ground that I have included the importance of endowing research among the chief points to which I have been anxious to draw your attention.

In referring to the new struggle for existence among civilized communities, I pointed out that the solution of a large number of scientific problems is now daily required for the State service, and that in this and other ways the source and standard of national efficiency have been greatly changed.

Much evidence bearing upon the amount of scientific knowledge required for the proper administration of the public departments and the amount of scientific work done by and for the nation was brought before the Royal Commission on Science presided over by the late Duke of Devonshire now more than a quarter of a century ago.

The Commission unanimously recommended that the State should be aided by a scientific council in facing the new problems constantly arising.

But while the home Government has apparently made up its mind to neglect the advice so seriously given, it should be a source of gratification to us all to know that the application of the resources of modern science to the economic, industrial and agricultural development of India has for many years engaged the earnest attention of the Government of that country. Famine Commissioners of 1878 laid much stress on the institution of scientific inquiry and experiment designed to lead to the gradual increase of the food-supply and to the greater stability of agricultural outturn, while the experience of recent years has indicated the increasing importance of the study of the economic products and mineralbearing tracts.

Lord Curzon has recently ordered the heads of the various scientific departments to form a board, which shall meet twice annually, to begin with, to formulate a program and to review past work. The board is also to act as an advisory committee to the Government, providing among other matters for the proper coordination of all matters of scientific inquiry affecting India's welfare.

Lord Curzon is to be warmly congratulated upon the step he has taken, which is certain to bring benefit to our great dependency.

The importance of such a board is many times greater at home, with so many external as well as internal interests to look after, problems common to peace and war, problems requiring the help of the economic as well as of the physical sciences.

It may be asked, what is done in Germany, where science is fostered and utilized far more than here?

9 "Nature," Septembe. 4, 1902.

The answer is, there is such a council. I fancy very much like what our Privy Council once was. It consists of representatives of the Ministry, the universities, the industries, and agriculture. It is small, consisting of about a dozen members, consultative, and it reports direct to the Emperor. It does for industrial war what military and so-called defence councils do for national armaments: it considers everything relating to the use of brainpower in peace, from alterations in school regulations and the organization of the universities, to railway rates and fiscal schemes, including the adjustment of duties. I am informed that what this council advises generally becomes law.

It should be pretty obvious that a nation so provided must have enormous chances in its favor. It is a question of drilled battalions against an undisciplined army, of the use of the scientific spirit as opposed to the hope of "muddling through."

Mr. Haldane has recently reminded us that "the weapons which science places in the hands of those who engage in great rivalries of commerce leave those who are without them, however brave, as badly off as were the dervishes of Omdurman against the Maxims of Lord Kitchener."

Without such a machinery as this, how can our Ministers and our rulers be kept completely informed on a thousand things of vital importance? Why should our position and requirements as an industrial and thinking nation receive less attention from the authorities than the headdress of the Guards? How, in the words of Lord Curzon, o can "the life and vigor of a nation be summed up before the world in the person of its sovereign" if the national organization is so defective that it has no means of keeping the head of the State informed on things

^{10 &}quot;Times," September 30, 1902,

touching the most vital and lasting interests of the country? We seem to be still in the Palæolithic age in such matters, the chief difference being that the sword has replaced the flint implement.

Some may say that it is contrary to our habit to expect the Government to interest itself too much or to spend money on matters relating to peace; that war dangers are the only ones to be met or to be studied.

But this view leaves science and the progress of science out of the question. Every scientific advance is now, and will in the future be more and more, applied to war. It is no longer a question of an armed force with scientific corps, it is a question of an armed force scientific from top to bottom. Thank God the Navy has already found this out. Science will ultimately rule all the operations both of peace and war, and therefore the industrial and the fighting population must both have a large common ground of education. Already it is not looking too far ahead to see that in a perfect State there will be a double use of each citizen, a peace use and a war use, and the more science advances the more the old difference between the peaceful citizen and the man at arms will disappear; the barrack, if it still exists, and the workshop will be assimilated, the land unit, like the battleship, will become a school of applied science, self-contained, in which the officers will be the efficient teachers.

I do not think it is yet recognized how much the problem of national defence has thus become associated with that with which we are now chiefly concerned.

These, then, are some of the reasons which compel me to point out that a scientific council, which might be a scientific committee of the Privy Council, in dealing primarily with the national needs in times of peace, would be a source of strength to the nation.

To sum up, then. My earnest appeal to you is to gird up your loins and to see to it that the science of the British Empire shall no longer remain unorganized. I have endeavored to point out to you how the nation at present suffers from the absence of a powerful, continuous, reasoned expression of scientific opinion, urging in season and out of season that we shall be armed as other nations are with efficient universities and facilities for research to uphold the flag of Britain in the domain of learning and discovery, and what they alone can bring.

I have also endeavored to show how, when this is done, the nation will still be less strong than it need be if there be not added to our many existing councils another, to secure that, even during peace, the benefits which a proper coordination of scientific effort in the nation's interest can bring shall not be neglected as they are at present.

Lest some of you may think that scientific organization which I trust you will determine to found would risk success in working on such large lines, let me remind you that in 1859, when the late Prince Consort occupied this chair, he referred to "impediments" to scientific progress, and said, "they are often such as can only be successfully dealt with by the powerful arm of the State or the long purse of the nation."

If the Prince Consort had lived to continue his advocacy of science, our position to-day would have been very different. His early death was as bad for Britain as the loss of a great campaign. If we cannot regain what we have lost, matters cannot mend.

I have done what I feel to be my duty in bringing the present condition of things before you. It is now your duty, if you agree with me, to see that it be put right. You can if you will.

WILLIAM ERNEST HENLEY. Some Memories and Impressions.

In the days of my early acquaintance with Henley, some fourteen or fifteen years ago, I could never look at him without wondering why none of his artist frends had taken him for a model of Pan. They say he was like Johnson, and like Heine; and he had something of both. But to me he was the startling image of Pan come on earth and clothed-the great god Pan, down in the reeds by the river, with balting foot and flaming shaggy hair, and arms and shoulders huge and threatening, like those of some Faun or Satyr of the ancient woods, and the brow and eyes of the Olympians. Wellnigh captive to his chair, with the crutch never far from his elbow, dragging himself when he moved, with slow effort, he yet seemed instinct with the life of the germinating elemental earth, when gods and men were vital with the force that throbbed in beast and flower and wandering breeze. The large heart, and the large frame, the broad tolerant smile, the inexhaustible interest in nature and mankind, the brave, unquenchable cheerfulness under afflictions and adversities, the frank appreciation and apology for the animal side of things, all helped to maintain the impression of a kind · of Pagan strength and simplicity. One thinks of some verses of his own:-

Yet beautiful and spacious
The wise old world appears,
Yet frank and fair and gracious
Outlaugh the jocund years.
Our arguments disputing,
The universal Pan,
Still wanders fluting—fluting—
Fluting to maid and man.
Our weary well-a-waying
His music cannot still:
Come! let us go a-maying,
And pipe with him our fill.

Chained, as he was for the most of his days, to a few rooms, he rioted in the open air, in the sunshine, the wind, and the stars. Stevenson writes how he took him out from the Edinburgh infirmary for a drive in the spring-time:—

The whole country is mad with green. To see the cherry-blossom bitten out upon the black firs, and the black firs bitten out upon the blue sky, was a sight to set before a king. You may imagine what it was to a man who has been eighteen months in a hospital ward. The look of his face was a wine to me.

It was a wine to any man to see Henley in the country, or to hear him talk of country things: a wine that he poured into many hearts from the generous beaker of his own.

This antithesis between the man as he was and the man as he might have been made the life of Henley pathetic and beautiful. To have known him was, in some sense, a liberal education. It was exhilarating to sit beside the fettered giant and watch him shake himself free from the shackles, and soar into the large empyrean of adventure and achievement. Pinioned "in the fell clutch of circumstances" he fronted his Fate with a noble fortitude:—

And ever with a frolic welcome took The thunder and the sunshine.

There was in him something more than the patient resignation of the religious sufferer, who had bowed himself to the uses of adversity. Deep in his nature lay an inner well of cheerfulness, a spontaneous joy of living, that nothing could drain dry, though it dwindled sadly after the crowning affliction of his little daughter's death. Yet, in his worst moments of depression, wearled, time-worn, prematurely old, butchered by the surgeons' knives, waiting for the end, "which is, we know, the best of all," he kept his unquenchable interest in life and the things that make life a show worth seeing.

As dust that drives, as straws that blow, Into the night go one and all.

So he wrote on the fly-leaf of a copy of the re-issue of his "Poems" which he gave me in February 1899. But it is not this mood which one remembers in thinking of Henley. The recollection I carry away from my meetings and colloquies with him is that of his splendid daring optimism. It was not based on anything that is commonly called religious conviction. had faith in abundance; but no faith in a future state comfortably arranged to redress the errors, and repair the failures, of a somewhat deplorable world. This robust Paganism was perfectly sincere; and if it brought him little comfort, he would not suffer it to plunge him into gloom. When he opened the door there lay before him the void of night, empty and profound. If he had known his Catullus, which I doubt, for he had small Latin and less Greek, he might have echoed that saddest, sweetest, stave from the music of the ancient world:-

Soles occidere et redire possunt: Nobis cum semel occidit brevis lux, Nox est perpetua una dormienda,

But Henley, though, I dare say, he would have been the last to repudiate the solace suggested by Lesbia's lover, was more of a Stoic than an Epicurean:—

Beyond this place of wrath and tears Looms but the Horror of the shade, And yet the menace of the years Finds, and shall find me, unafraid.

It was not the negation of despair. He found the anodyne for that "unconquerable soul," of which his splendid Gasconade boasts, in the thought of valor and gallant action, in love, and art, and nature. He had the poet's consolation—the "voice of strange command" that calls "as friend calls friend" to those, the chosen, who have once heard it:—

Out of the sound of the ebb-and-flow, Out of the sight of damp and star, It calls you where the good winds blow,

Where the unchanging meadows are: From faded hopes, and hopes agleam, It calls you, calls you, night and day, Beyond the dark, into the dream, Over the hills and far away.

Under the bluster of his manner, there was a serenity, based on that feeling for the truth and beauty of things, to which this exquisite lyric testifies. I have a letter from him, written at a period of his later fortunes, when things were not going too well with him in many ways. He had just gone to live at Muswell Hill, and he writes:—

Come when you will. There is generally food on Sundays about 1.30. I want you to see this curious, not uninhabitable, still-unlicensed corner-pub, in which we've set up our nest. 'Tis bare and leafless now—Bare ruined quires, &c. But, even so, on a decent day, that best of decorators, the Sun, has remarks to make which are worth heeding. So come, some time.

I went, I remember, soon after. It was a mild December day, with some gleams of a wintry sun, when I made the pilgrimage to those Northern Heights. A cab from the railway-station joited my companion and myself through the trim, blank streets, asleep in the gray stillness of afternoon in a London suburb. We found Henley's

"corner-pub" a very decent little villa, with a tree or two, and a triangular patch of garden-ground, that looked out on a wide prospect. We sat on chairs out on the turf, and Henley talked to us of Dickens, and Dumas, and Millet and Meissonier and Le Sage, and the iniquities of Mr. Gladstone, and spoke kindly of the friends he liked, and with something less than the former Johnsonian scorn of the literary gentlemen who were not of his communion. Smoking cigarettes, in a faded tweed or flannel jacket, and drab shirt, open at the throat, and with the fiery hair and beard turning to gray, he was no longer the great god Pan. Age-for he seemed old, though he was two years less than fifty-had touched the picture and toned down the cruder surfaces. There was something of ripe and patriarchal wisdom in his talk and manner, more comprehension suavity, and the smile in its humanity was more broadly tolerant than ever. From my garden-seat the slopes of Highgate stretched before the eye, and I thought how one might have travelled to the house of the admirable Mr. Gillman some seventy years ago and listened to the words of Samuel Taylor Coleridge.

In the course of this same afternoon, a good friend of Henley's came up to Muswell Hill with the welcome tidings that Mr. Balfour had decided to recommend him for a pension from the Civil List Fund. This very proper exercise of public liberality assisted Henley to settle down at a pleasant house in Worthing. Here, in the warm quiet little town, swept by the mild seawinds, under the shelter of the South Downs, his health improved at first. though I suppose it was clear to himself, as well as to others, that his span of life was narrowing in. But broken and ailing, as he was, and with the inextinguishable sorrow for his daughter's death at his heart, his head was

still "unbowed" and he faced Fate with the old royal fortitude, though with less defiant challenge. Friends from London or Brighton would travel down to see him, and walk beside his bathchair, or sit with him in his study of afternoons; and I think that to some of them in this phase he was more the cher maître, the adept in art and life, who could give wise counsels from the heights and depths of his own experience, than he had been in the days when he was playing a not inconspicuous part in literary and journalistic London. I do not say he had abandoned his prejudices, his bigotries, his obstinate prepossessions, for they were part of his being; but they were, or seemed at least to be, softened and broadened. The neo-Imperialist movement, with which he sympathized heart and soul, and the South African War, thrilled him with triumphant emotion. "This war," he wrote, "has been so good a thing that my heart sings in my breast when I think of it. I look beyond the telegrams and am content. If ever I open my lips in song again, 'twill be to that effect." He did open his lips, and he wrote his "Last Post," the noble epitaph on the dead who died for England, which has been set to noble music:-

The day's high work is over and done, And these no more will heed the sun; Blow, you bugles of England, blow! These are gone whither all must go, Mightily gone from the field they won. So in the workaday wear of battle, Touched to glory with God's own red, Bear we our chosen to their bed!

He was more generous, more sympathetic: and this I think may be said in spite of the famous Stevenson outbreak, which alienated so many to whom the friendship of "R. L. S." and "W. E. H." had been a fragrant memory. In England these literary intimacies, partly sentimental, partly professional, have been less common than

they are in France. But in the Brüderschaft of Henley and Stevenson, not exactly reticent or unobtrusive, but flaunted in prose and verse with the frankness of the quartier and the cabaret, we seemed to have a streak of the vivid Paris artist life, dashed across the sober gray of our duller English writing business. One remembers the lines to Mr. Charles Baxter who was, for some time, the third member in the partnership:—

We have been friends, Lewis and you and I

(How good it sounds, "Lewis and you and I"):

Such friends, I like to think,

That in us three, Lewis and me and you,

Is something of that gallant dream, Which old Dumas—the generous, the humane.

The seven-and-seventy times to be forgiven,

Dreamed for a blessing to the race, The immortal Musketeers.

With these lines before one and in print, the final savage attack on Mr. Graham Balfour's "Life,"-the worst, though not the first, assault by Henley on the memory of his dead friend-was hard to pardon. Would Stevenson have pardoned it? Perhaps, at any rate, he would have understood the turmoil of impatience and irritation, which seethed in Henley's brain, when the multitude, the profane multitude of the half-taught and loose-thinking, praised his old friend for just those qualities which he regarded as his defects, and turned him, so he thought, into a lay figure robed in the smug virtues of villadom. Stevenson might have made allowance for the angry egotism of the literary temperament and the scalding jealousy of the literary friendship.

Henley's relations to his friends—to those, at least, who were addicted to the painful trade of letters—were curious, though perhaps not very un-

usual. No man was quicker to acclaim merit, particularly if it was the kind he specially appreciated. He was the cheerful Socrates of a somewhat noisy Academe in the later 'eighties and the 'nineties. Like Dr. Johnson he loved the "young dogs" who gathered round him, and whom he patronized, browbeat, criticized, and encouraged. If he "sat upon" his disciples and admirers himself, he would not allow others to do so. His enthusiasm was emphatic and unrestrained, and his praises were not always judicious. He cherished a generous illusion that all his geese were swans; and when he had discovered a new genius, he made the welkin ring with his rhapsodies, and was ready to bludgeon you to the earth if you showed any reluctance to fall down before the shrine. He had the amiable weakness of imagining that the special bit of work which he or any of his collaborators or associates was engaged upon for the moment was the most important in the world. "If the new century can start with a better book," so he writes of one of his admirable Tudor Translations, "I'd like to know that book." This fervor and warmth of appreciation was among the traits that made Henley delightful. But, like other discoveries, he sometimes exaggerated the quantity of his own achievement, and ignored the work of other explorers. I believe he had come to regard himself as the "inventor" of various distinguished men of letters of this era, who would assuredly have attained success if there had been no Henley to encourage them, and no National Observer. He vastly over-estimated, and so I note have many other people since his death, his share in the making of Stevenson's literary fame. It is absurd to say that "R. L. S." owed anything substantial to such advertisement and opportunities as it was in Henley's power to

give him. The great reading public of England and America, who were first attracted by "Treasure Island," and then found themselves captivated by one masterpiece after another, till the splendid series ended with the broken column of "Weir of Hermiston" -these people, for the most part, had never heard of Henley, and of the journals and articles he produced for the benefit of a minute literary coterie in London. No "National Observer," no journalistic fly-posting, was needed, to spread the fame of the man who could write "Dr. Jekyll" and "Kidnapped." But I do not think Henley ever quite understood this. In his later days, especially, worn and old, and drifted into a backwater, he was apt to magnify the importance of his editorial career. It is a common habit with gentlemen who have been, and have ceased to be, editors of journals with some pretension to influence. To have sat conspicuously in the seat of judgment; to have it in your power to reward merit and damn incompetence, loading one author or politician with honor, and ordering another to the scaffold or the vivisection chamber; to have, or think you have, the power of life and death over the new book that steals trembling into your presence; to spend your life accepting, rejecting, praising, condemning-all this does undoubtedly tend to vapis, and more perhaps in the recollection than the act.

The editor on the retired list remembers that he was once a cloud-compeller, and forgets that his thunder-bolts never really shook the spheres. Henley was undoubtedly hubristical, even beyond the average of his craft. And when the fledglings of his nest emerged, and found their wings, and soared into the sunlight of public applause, he was inclined to take the credit of the flight to himself, and was sometimes jealous and irrita-

bly pettish if the obligation was not admitted.

The episode of the National Observer (or the Scots Observer as they called it at first) always struck me as curious and interesting. The paper made a certain stir in the world, though I believe its circulation was quite insig-The great stupid public, nificant. whom Henley thought he was worrying into fury, knew nothing of the whole matter. The darts and arrows did not so much as glance off the creature's thick hide, for they never even touched it. There was enough whimsical and perverted brilliancy in the two Observers to make the fortune of a dozen journals in France and to ruin a hundred in England. as the guide and mentor of cultured British Toryism was ludicrously out of his place. No one could possibly be less in touch with the placid Conservatism of the comfortable classes, to whom ostensibly the appeal of the paper, in Edinburgh and London, was made. The editor had an angry impatience of modern Radicalism and all its works, but he was not in the smallest degree a Tory. On the contrary, he was himself a contemner of traditions, an insurgent against convention, innovator, an iconoclast. laughed stridently, alike at the surface prejudices and at the deepest convictions, of those who should have been his readers. His very style, with its bold turns, its straining individuality, its affectations, and its surprises, breathed the spirit of revolt. He supposed himself a defender of the established order against the rising tide of revolution; but he sneered at most of the respectable things, and treated the Constitution, Parliament, the Universities, and the aristocratic arrangement of British society, as scornfully as he handled the ideals of the masses and the culture of the bourgeoisie.

The ethics of the paper were a virile

hedonism; its religion was Henley's frank Paganism. Sometimes it exhibited a kind of Voltairean scepticism; more often it conveyed the impression that its editor regarded the Supreme Being as a literary invention, and Christianity as a superstition of the British middle classes. Its attitude towards these same middle classes was its least pleasing characteristic. The perpetual gibe at "your Claphamite" and "your Peckhamite," the air of gentlemanly contempt for the pursuits, and the occupations, of the great unlettered and unleisured majority, became monotonously offensive. This sham dandyism soon ceased to be amusing and grew snobbish and disagreeable. But with all its faults, the National Observer will be remembered by its readers and its contributors-the latter could not have been much less numerous than the former-with affection. It was alive with its editor's pulsing vitality. Henley's great heart beat exuberantly through its pages. Sometimes you might have called it foolish, but you never thought it dull, at least if you had any care for literature, or art, or style. Right or wrong, Henley and his swordsmen bared their blades with a joyous shout, and threw themselves into a combat with all the vigor that was in them. In the National Observer there was no hack writing, no perfunctory filling of columns, for the sake of the quarterly cheque. Of how many journals can so much be be said? Let us add that the paper was quick to recognize merit, new or old, and its tastes were wide and good. It praised Rodin, it praised Meredith, and Swinburne, and Hardy; it glorified the memory of Dickens; it found a place for the prose of Stevenson, and the Barrack Room Ballads of Kipling; it tried the prentice hands of a dashing company of young writers, who have done brave work since; and it was always gay and gallant, witty

and irresponsible. Everybody connected with the paper enjoyed it immensely, except perhaps the proprietors, who, I dare say, found it an expensive luxury. But nobody, I think, was so pleased as the editor, who gave his little senate laws, a genial Cato, and ruled his kingdom with a burly despotism, tempered by blunt epigrams, rejoicing in the movement and the réclame that whirled about him. He and the more intimate of his literary associates lived in a brisk fellowship. The labors of the desk and the office were tempered by pleasant dinners and lively luncheons, in the unassuming restaurants off Leicester Square, where satisfying food and potent Burgundy and Chianti were to be had. It was like a glimpse into the old Bohemia that has passed away, to see Henley lounging at the head of the table, with his bodyguard ranged round a very festal board, while quip, and crank, and shrewd criticism, and Rabelaisian jest, were bandied from hand to hand, under a floating cloud of tobacco-smoke. Henley delighted in the now almost extinct art of conversation. Give him a companion to his temper, or an opponent worthy his artillery, and he would talk for hours. I remember him at luncheon-not in a restaurant, but at a friend's house -where among the guests was another famous editor of those days, his equal in the arts of debate, in knowledge, resource, and verbal readiness. fore the first course was over, they were in the full flow of argument, and presently all other tones were hushed below the two resounding voices, that filled the small room, and made the glasses clink. The other guests had eaten and drunk and listened their fill, and melted away; but Henley and his antagonist would not budge. They sat on, through the long summer afternoon, disputing of Hugo and Baudelaire, of the Classics and Romanticists,

of Smollett and Sterne, of Tories and Radicals, Ibsen and Burne-Jones—je n'en sais quoi—overwhelming each other with quotations, references, allusions, and objurgations. It was six o'clock when Henley was helped into his cab, exhausted but unbeaten, with a menace to renew the contest another day.

To me, then as always, the relation between Henley's personality and his literary work was a source of unfailing interest. Great is the mystery of artistic achievement, nor is temperament always the key to it. For all that you could see and know of Henley, you would have deemed him essentially a robust writer, fertile, fluent, prolific, and perhaps careless. You could conceive him the composer of full-blooded tales of adventure, of copious angry satires, of fierce allegories, warm with the sava indignatio of Swift, of melodramic romantic plays. But in fact he did none of these things. He seemed incapable of what an eighteenth-century critic would have called a sustained flight; and he was apparently destitute of any real constructive or creative power. He never wrote a story, or a narrative poem, or anything in prose which was beyond the limits of a short essay; and if in his three plays he was able to "stay" over a somewhat longer course, it was only with the assistance of Stevenson, who no doubt was responsible for the constructional and dramatic part of the work, such as it is. Henley was the painter of miniatures, the maker of cameos. There are some rough, and even brutal, passages in his poems; but his art, taken as a whole, was delicate. precise, and finished. When he set to work, the violence that one noticed in his talk, the over-emphasis of his intellectual temper, died away; in his best passages he has the subtle restraint, the economy of material, and the careful manipulation, of the artist-workman. He will live through his lyric passages, and his vignettes, in prose and verse. No man of our time has expressed a mood of the emotions with more absolute appropriateness and verbal harmony, and that is lyric poetry in its essence. Some of his songs are gems of almost faultless expression:—

O gather me the rose, the rose, While yet in flower we find it, For summer smiles, but summer goes, And winter waits behind it.

For with the dream foregone, foregone, The deed foreborne for ever, The worm regret will canker on, And time will turn him never.

So well it were to love, my love, And cheat of any laughter The fate beneath us and above, The dark before and after.

The myrtle and the rose, the rose,
The sunshine and the swallow,
The dream that comes, the wish that
goes,

The memories that follow!

The sentiment is simple, trite, commonplace, one might call it hackneyed; it recurs in Burns, De Musset, Béranger, in the Elizabethans passim. the greater is the cunning of hand, the mere verbal manipulation, and the welding of rhythm and thought, that give the novelty and charm. But better even than his lyrics are Henley's portraits and pictures, which have the firmness and brilliancy of Meissonier, the light and shade and bold line of Whistler's etchings. Such are some of the rhymes and rhythms in Hospital, and almost the whole of the original and striking "London Voluntaries":-

What miracle is happening in the air. Charging the very texture of the gray With something luminous and rare? The night goes out like an ill-parcelled fire,

And, as one lights a candle, it is day.

The extinguisher, that perks it, like a spire.

On the little formal church, is not yet green

Across the water; but the house-tops nigher,

The corner-lines, the chimneys-look how clean,

How new, how naked! See the batch of boats,

Here at the stairs, washed in the freshsprung beam!

And those are barges, that were goblin floats,

Black, hag-steered, fraught with devilry and dream!

And in the piles the water frolics clear, The ripples into loose rings wander and flee,

And we—we can behold that could but hear

The ancient River, singing as he goes. New-mailed in morning, to the ancient Sea.

You get the same qualities in the best of his prose. His criticisms, which one may read again and again for their honesty, their breadth, their humanity, their charity and their clarity, are specially notable for the manner of their presentation. The "Views and Reviews" are not so much essays as a series of pictorial impressions. They are like those folding screens which used to be fashionable in our drawingrooms, and are I believe still in vogue in the nurseries: fabrics of canvas or buckram pasted all over with pic-Every few sentences or so, Henley stops to give you a vivid thing in pastels, or a piece of illuminated work, stiff with gold and enamelling, or again a sketch in water-color, clean, cool and luminous. Thus, when writing of Professor Butcher's and Mr. Lang's Odyssey :-

In a space of shining and fragrant clarity you have a vision of marble columns and stately cities, of men august in single-heartedness and strength, and women, comely and simple and superb as goddesses; and with a music of leaves, and winds, and waters, of plunging ships, and clang-

ing armors, of girls at song and kindly gods discoursing, the sunny-eyed heroic age is revealed in all its nobleness, in all its majesty, its candor, and its charm. The air is yet plangent with echoes of the leaguer of Troy, and Odysseus the ready-at-need goes forth upon his wanderings; into the cave of Polypheme, into the land of giants, into the very regions of the dead: to hear among the olive trees the voice of Circe, the sweet witch singing her magic song as she fares to and fro before her golden loom: to rest and pine in the island of Calypso, the kind seagoddess; to meet with Nausicaa, loveliest of mortal maids; to reach his Ithaca, and do battle with the wooers, and age in peace and honor by the side of the wise Penelope.

In the preface to the collected edition of his "Poems" (1898), Henley says that he had almost to abandon the writing of verse, for some time, because, "after spending the better part of my life in the pursuit of poetry, I found myself so utterly unmarketable that I had to own myself beaten in art, and to addict myself to journalism for the next ten years." But, beaten or not, Henley never let go his hold on the artistic Nothing, I think, is more method. creditable to him than the manner in which he resisted the temptation-the worst and greatest of those that assail persons "addicted to" journalism-to lighten his labors and enlarge his income by pouring out floods of loose, easy work. Sometimes he wrote "below himself," as everybody does, but never, I should think, consciously, and at all times with a really heroic fidelity to his ideal of technical excellence. What he could do, he did well; what he was unfit to do, he knew, and he did not attempt it. "Il est donné de nos jours, à un peu petit nombre, même parmi les plus délicats et ceux qui les apprécient le mieux, de recueillir, d'ordonner, sa vie, selon ses admirations et selon ses goûts, avec suite, avec noblesse." Henley says that Matthew Arnold is one of the few to whom this

sentence of Sainte-Beuve may be properly applied. But he could have claimed it also for himself. He too might "se vanter d'être resté fidèle à soi-même, à son premier et à son plus beau passé." And there have not been many literary men of our time of whom this could be said with more justice.

Sidney Low.

The Cornhill Magazine.

MY GREAT-GRANDMOTHER'S LUTE.

It hangs on the wall in the corner where the low sun just touches it, outlining it against the shadow and turning the rich bronze of its curving ribs to gold. It is very beautiful in its slender swelling fullness, very perfect in color; polished with age till the play of light upon its shining surfaces is a thing rather to see than Also it has a strange to describe. perverse charm of unexpectedness, almost of deformity; for, in place of the short sharply-flexed lute-head, its slender neck stretches into the long straight finger-board of a guitar. "A lute with a history, I imagine," was the comment of one who knows much of these things, when it was taken to him to be restored. And he touched it with lingering fingers. "A fine piece, too, as I have seen; very old, and what a shape! Of course, that neck spoils it; but if it were mine, it should not be altered. I am sure it has a history."

Yes, and I, too, would not have it altered. I, who know that history, or as much of it as has been told to their daughters by the women who have played on it during more than two hundred years. In that time much may come to pass, and my lute has many stories, but there is only one that I can never forget, that, when I look at it, I remember always.

When first it came to me I found a scrap of ribbon hanging from the ivory stud at the lower end, a thin gauzy string of blue with a white edge

of open work, such as our grandmothers wore nearly a hundred years ago. But underneath there was still another fragment of crumbling silk, almost colorless with age, but still perceptibly tricolor in its folds; a fragment that had been sheltered and preserved by the later ribbon wrapped about it. And on the face of the lute, where the player's hand rests, there are curious stains, I think of blood. It has been restored at least twice within the last hundred years, and again there are fine cracks seaming its ancient face; yet in spite of its great age the tone of it is extraordinarily full and sweet, with a peculiar soft resonance in it that is difficult to describe. It has always been my fancy that there are voices in it, the very distant voices of children and the far echo of a song; but that is because I think always of the story I am going to tell as it has been told to me. Perhaps I should scarcely call it a story. There is so very much that we do not know; it is rather a series of glimpses into the past, told without cohesion, at long intervals, and pieced together by the loving ears that heard them.

For my grandmother out of her own memories could add and interpret much. She remembered living in the bare comfortless rooms of the old family house, in a poverty that was the bleaker from its setting. She had seen the sword-slashed tapestry and loved its faded blood-stained pic-

tures; she knew the secret hidingplace whence her grandfather had been dragged on his way to the guillotine, and had helped to tend the grandmother who came out of the prisons as out of the grave, who to her life's end was always a helpless shadow of the older France, alien and bewildered in the new. She remembered that she and her sister were in their childhood dressed as boys, and called by the names of their dead brothers, to please their father's morbid fancy; and she recalled too that never had her mother used those names, never had they heard them cross her lips. And later they had travelled to a cold gray land in the north, where my grandmother was to make a much dearer home than she had ever known in France, but a home in which her mother lived to the end of her long life, an alien and a stranger to the last, never speaking the tongue of those about her, knowing little more of the country she lived in than she could see from her window. She was always very quiet, very still in her ways and chary of words, seeming often to be far absent in her thoughts; it was only towards the end, when her husband had long been dead, that she sometimes talked to her daughters and told them a little-a very little-of the past. And from what she told them, and from what they themselves remembered, and from some old papers that came ultimately to their keeping, they pieced together all that we shall ever know of the story of Suzanne Duval and her lute.

And the story begins, as it seems to me, with a song.

Je me fus dans le jardin Parmi les rosiers; J'ai vu mon bien-aimé Qui par là passait. Il m'envoyait un baiser Gai! mon eœur, gai! Les roses sont fleuries, Les roses de Mai!

J'ai perdu mon bien-aimé; Il s'en est allé; Il a pris la Mort Pour sa fiancée. Il m'a quitté, Gai, mon cœur, gai; Les roses sont fanées, Les roses de Mai.

One hundred and fifteen years ago there stood an ancient and stately house in the silk-weavers' quarter of Lyons. It stands there, indeed, still, though sorely changed and debased; the carved lintels and mouldings chipped, the pilasters and garlands broken away. The window-panes are cracked; the high roof sags and bulges; and the rubbish-littered square on which it looks is casually a market and always a playground for innumerable children.

Yet it is not so long since the Maison Duval stood in sober stateliness amid its fellows, the houses of the great silk-merchants of the city, who lived here near their looms and workshops on the low ground between river and hill. They formed almost a class to themselves, these silk-weavers dressers; brilliant. wealthy, singularly independent, they lived in great luxury and as much comfort as the time understood, and with their common interests and constant intermarriage, formed a society curiously associate and compact. And in this society, a hundred and ten or twenty years ago, a prominent place was held by Joseph Duval, the great satindresser, who held in his hands the practical monopoly of the trade. He had travelled to England to study improvements in machinery, he had invented, perfected, elaborated, simplified, the methods and material he had found in use, till there were in France no donneurs d'eau, as they were technically termed, who could compete with

the Ateliers Duval. In consequence, he had become very rich; his house was one of the finest in the quarter; he was important, respected and envied. He had a wife who was called the wittiest woman in Lyons, and had once been the loveliest; and he had a daughter who was now all that her mother had been. And that daughter, in all her seventeen years, had never known a hard word, or been stinted in anything she desired. Her childhood was joy.

. . . To-night was the betrothal of Suzanne Duval, and the old house was at its gayest. There were lights everywhere, and many servants, and guests swarming up the great double stairs and crowding the salons; for everyone in Lyons, everyone of any importance, was here to do homage to Suzanne and to criticize her futur. The marriage was one that had been talked of, and not always with ap-Gaston La Derive was an proval. "outsider." not of their class or city, not of their profession, not even wealthy or specially high-born. had happened to please old Joseph Duval, who praised his clear head and quick judgment in affairs; here was a son-in-law fit to succeed him, he declared, and as to money, he himself was surely rich enough to do as he liked. It was not customary to consider in any way the opinion of the bride; but there were those who knew Suzanne well who wondered if this cold and formal young man were a wellchosen husband for Duval's petted daughter.

She was standing just now beside her mother at the end of the long salon, waiting for her father to lead up to her the man that was to be her husband, and thinking, surely, of many things; but neither then, nor at any time, do we know her thoughts. We have to be satisfied with impressions: a slight little figure resplendent in satin and lace, a small head held high, a curiously direct regard that looks out of her miniature to-day as it must have looked down the long salon at her father and the man who advanced beside him on the night of her betrothal.

"My daughter, I present to you M. Gaston La Derive. . ." Joseph Duval's voice rolled on in the customary platitudes, and his chosen son-in-law duly made his salutations. He was good-looking and well-built, with a pretty leg and a fine manner; a little formal, with eyes somewhat close together, and a supercilious air that appeared distinguished. Suzanne knew nothing of him, but she had no active objection to him as her fiancé. He pleased her eye, and, spoilt child though she was, it had never occurred to her that she might choose her own husband. She accepted alike the flowers he presented to her and his declaration of devotion with a curtsey to the ground, and expressed her obedience to her father in phrases demurely, unhesitatingly gracious. Then she gave him her finger-tips, and together they walked through the salon to receive the congratulations of the guests. It was all very fine, very moving, very brilliant. A sudden intoxication bewildered Suzanne, who preserved in her memory the impression of many lights above and about her, of lights reflected in mirrors and shining silks, of lights flashing and sparkling from innumerable jewels. The rest was uncertain; she seemed to tread on air through a mist of light, conscious always of the young man beside her. Curtseying, smiling, responding, somehow she fulfilled her part but remembered none of it: the confusion only lifted as she found herself with her lute in her hands (the lute that had no guitar-head then) and her mother whispering to her as she settled the ribbons on her shoulder.

"Sing your best, ma fille . . .but not the foolish little airs you sing to us, dear one. Something serious . . . you understand? . . . He detests childishness . . . and I fear he thinks you very young. . ."

Suzanne lifted her head high, at the first criticism she had ever known, and looked up to meet, in silence, an unemotional regard. Then her hand fell sharply on the strings and she began to sing.

> I walked in my garden, Where roses grow. . . .

Gaston turned away. I think the lights went out then, for Suzanne, and were never lit again.

It was night, again, in Lyons. Above the lights of the city, above its spires and roofs, the sky lifted itself into the placidity of darkness; there was no wind, there were no clouds, there were few stars, only the deep and lovely silence of wide sky, undisturbed, profound. It was below, in the city, that no peace was.

In the level between the river and the hill, where the silk-factories lay, the streets were filled with an unusual Here, at this hour, there turmoil. should have been peace; for the day was long, and the nights too short for a man to get his full rest in. From dawn to twilight the looms worked with their ceaseless thud and clatter, pausing only when light failed; darkness brought silence, and the sleep of wearied men. But to-night there was neither silence nor sleep. The narrow ill-lit streets were thronged by a crowd of singular incohesion, that pressed itself into groups only to drift apart again; that gathered round a knot of speakers, and scattered when a voice lifted into domination. There was constant movement without progression, an excitement that checked itself into hesitation. The noise rose and fell, passing from the scuffling stamp of a crowd and sudden bursts of speech to quick silences when men eyed each other side-long and a voice left audible quavered and was hushed; only to rise again into the roar of movement, the security of noise, of companionship, of being each in the confusion unmarked. They had done nothing—yet; they were waiting, as a mob always waits, for the impulse that drives it. And the courier from the north, with death in his budget, was riding hot-foot into Lyons. . .

In her own room Suzanne paced up and down with her boy in her arms. He was a wakeful rogue, and growing heavy; her back ached and her arms were stiff; sometimes her thoughts wandered. Unconsciously, as she walked up and down, she listened to the sounds of the night; somewhere below, her husband and father were closeted together; somewhere her mother, perhaps, was wakeful too. There was a roar that came intermittently, like wind afar off on the plain; she forgot to sing, in listening to it. It was coming nearer; the wind. . . . was it wind? . . . was growing deeper and more certain. There was something terrible in it; surely a storm was at hand. . . .

Théodore cried and opened wide his eyes. "Oh! . . . rogue! . . ."

I walked in my garden, But flowers there were none. . . I looked for my true love. . . .

The storm was at hand, indeed.

Suzanne was alone in Lyons, but she was in the old gray house no longer. Her husband had fled and she knew not where he was; she herself had been in no fit state to attempt escape. Her father and mother were in one or other of the overflowing prisons, if indeed they were still alive; he had been hidden during five weeks in his

own house, and Suzanne had stood by when they dragged him from the narrow shelf where he had lain so long, and had wept for his cramped and helpless limbs and the black hair turned to snowy white. It was the last time she had cried. It was years before she learned to weep wholesome tears again. Friends, kinsfolk, even acquaintance, were gone; some had escaped, many were in the prisons, more were dead. She was alone, save for Théodore, and little Sébastien who had been born in the midst of the siege and seemed to have thriven on the trouble about him. She had found a refuge in a miserable attic lent to her by a compassionate stranger, a bare raftered place high in the steepness of the roof, with nothing in it save a table and a couple of broken chairs, and a heap of straw thrown onto the built-in ledge that served as bed. But it had a window that looked up at nothing save the sky overhead, and Suzanne thanked God daily for it; so much the less had she been forced to see of the horrors about her. She went out very rarely. A woman in the house, who knew her helplessness, brought her bread and water and such miserable food as she could obtain. Here Sébastien was born; and Suzanne, altogether alone with him and little Théodore, untended, almost unfed, throve as she had not done in the luxury of her own home. When the sun shone down through the window and there was blue sky overhead, she played with her lute and her babies and forgot to be anything less than content. For she had kept the lute with her, the lute that seemed to hold for her every memory of her happy youth, and that sang to her in the voices she loved, the lute that was her children's joy and in some curious way her own comforter.

It happened one night that when

she had wrapped the little ones in her cloak and laid them on the straw in the box-bed, there came a tap to the door, a little scratching tap, the sound made by one who is in danger; and before Suzanne could reach it, a scrap of paper was pushed in by the crevice beneath. When she looked out on the ladder-like stair that climbed into the roof, there was no one to be seen; there was nothing to tell whose hand had brought her this, the first word she had had from her husband. She smoothed out the paper, almost too startled and bewildered to make out the small fine writing; reading and re-reading the few sentences with a dull sense of amazement as if at one dead returned to life. She had been so long alone, and so many had gone, and not come back; she had never questioned but that he was dead. And now he was alive, and safe, and had even thought of her. " . . In Italy: . . . have found work here, Genoa. . . . you had better join me at once. . . ." Suzanne gasped again. He gave her neither direction nor help, he did not tell her how, or where, to go; and above all, he sent her no money. How could she go without money? And how could he suppose she would have any? He had left her so little, and it had lasted already so many, many months; she put her hand to her breast where she hid her wedding-ring and the little packet of assignats, and did not need to count them, she knew too well how few there were left. And . when these were done? . . .

A little voice called to her from the bed where the children lay, and a pair of imperious arms were stretched out towards her. "Not asleep, p'tite maman. Come to Théodore and sing the darkness away!"

She sank on her knees beside him and forgot to be afraid. "Oh, we will go," she whispered, soothingly: "darlings, we will go somehow. I do not know how, yet, but I will take you. . . . and you shall be safe. Only you must sleep, little rogues, you must sleep and be strong. . ." And she took the lute that lay beside them, and sang the little song that had been hers, and now was theirs, the song that always sang them to sleep.

I looked for my true love, But my true love is gone!

So they left Lyons.

They started on a Wednesday in January, it must have been in 1793; on a cold dark day, with a wind blowing that Suzanne remembered to the day of her death. The lute was slung at her back, Sébastien was in her arms, and Théodore trotted at her side. Her dress was of a common cotton stuff with a crossed tippet of thin wool, and she wore wooden shoes and a kerchief knotted over her hair. It was partly a disguise, for it was not likely that such a poor peasant woman and her children would be interfered with; but she had been forced to sell her wedding-ring in order to go even so miserably clad. It was bitterly cold and she had not a single warm garment on her; for her own cloak had been cut down into clothes for the little ones. Tied about her neck were the few poor assignats that were all she had left, and in her tippet she had thrust some bread. So she started for Italy, in mid-winter, by roads unknown, almost penniless, with a child at her breast and another, not long able to walk, running at her side.

They passed the gates safely, by means of the forged papers that had cost Suzanne a share of the weddingring, and got out into the country that she knew so well, passing by ruined and deserted houses where she had once been a guest. Her thoughts must have been bitter; she must have realized intensely that there was no one she could turn to for help . . . That night she lay in a cottage, where the woman eyed her askance and gave her no food till she showed that she could pay for it, the next night in a barn, among straw, where the children slept sweetly, and she watched to shield them from the rate.

And so they went on, slowly, very slowly, measuring their journey by Théodore's weary legs, hungry, cold, but more hopeful with every mile that lay between them and Lyons, not unhappy when the weather was kind, at the worst, always together. It was not till her poor store of money gave out that their agony began.

Henceforward Suzanne's story is fitful and disconnected. It is but a picture here, or there, against the darkness; what she told is so much less than what must be guessed at. The veil was never wholly lifted by her from the tortured creature that had been herself. . . We know, only, that those were the darkest days of the Terror, when hand was against hand, and every man feared his neighbor. Suzanne found no help and dared look for none, as she passed through some of the most flercely revolutionary parts of France. once showed her daughters a faded tricolor cocarde. "But for that," she said,-"and how I hated it!-they would have torn us to pieces." She must have struggled on from village to village, in hopeless beggary, asking at house-doors for crusts for her children and often refused. food as was given to her was thrown like refuse to a famished dog, and more than once she was driven from shelter with kicks and curses. do not know how, or where, she slept; of all these weeks we know nothing.

But the season was long remembered for its continuous cold.

At last it appears that she arrived at a large village that lay on a hill-side, and the drifting snow had whitened the upper half of every house and left the bare black lower walls turned gloomily towards the road that climbed up to them. It was late in the livid twilight; Suzanne had been long on the road, forced to rest under hedges, sometimes carrying both the children, and she was weak and faint from lack of food. Sébastien was dozing in her arms; he slept much now. Théodore could barely drag himself beside her.

The houses round the dark marketplace seemed to be closed for the night. And they remained closed. Staggering from house to house, almost falling at each step, she knocked, and knocked, her hand too numb to feel the contact, when she beat it despairingly against the wood. And from the only door that opened she was cursed, and driven away. It was snowing again, and the white flakes dazed her; perhaps she fell. . . . And then, after what seemed a long, long time, she found herself stumbling through an open door and meeting a clamor of drunken voices and a suffocating waft of fetid air. were many men drinking, and certain women. She tried to rise from the floor where she had fallen beside the hearth; but the agony of weariness tortured her, and her wooden shoes were shiny with the blood from her wounded feet. And Sébastien was awake and not wailing as he had done these latter days; the women had taken him and Théodore and were warming them at the fire. Suzanne struggled to her feet. But the men had discovered her lute and swore she should sing to them, and one of them, more drunken than the

rest, jeered at her foully and tried to kiss her. And she saw that the women were feeding the children with bread sopped in wine. . . .

She caught up her lute and held it as a barrier between herself and the drunken men in front of her. She sang all they asked for, the Marseillaise, the Carmagnole, the wild street songs that wrung her heart with pain and horror, even, as they grew quieter, the little French chansons that are so droll and gay. She sang till they had drunk themselves into harmlessness, and the children were asleep too in the arms of those women whom Suzanne blessed. And then her voice broke, and she fainted.

After this, she sought the towns where she could sing in the streets and gain a few poor sous. It was little that she made, but it kept her just this side of starvation. So she sang to her lute wherever she went, sang all that they asked of her, the songs of the Revolution, the many airs of the old gay France that the Revolution had killed, all that she knew or could learn, save only onethe song that was her children's. And the child in her arms grew lighter day by day, and the little feet beside her lagged always more heavily; slowly, surely, the darkness closed in about her. One day, as she struggled along a wind-swept road, the burden at her breast grew so cold that she shuddered, and of a sudden she missed the wailing that was sweeter to her She could not stop; than silence. Théodore was dragging himself beside her, and the next town was far ahead; she must go on, on, on. And when they reached it, she must sing in the streets till a sou or two were flung to her-with that burden ice-cold at her breast.

It was a little place, very gray, beside a gray river, with a dark church wrecked and desecrated, and a graveyard defiled. It was there that she left Sébastien.

Again she went on. Often she carried Théodore now, for her arms were so empty, and he was always so tired; she would find him often with the silent tears running down his face. She herself was never tired now. every fibre in her body seemed to have turned to steel, and she pressed on, on, conscious that Italy came nearer every day, and that hope lay just beyond the encompassing hills. Her voice was hoarse and broken but she sang still, without caring that men jeered at her, caring only for the pence that staved off starvation; she sang even at night to Théodore, as he lay sleepless and weeping in the dark. And presently she crossed the frontier and found herself in Italy. There was a poor village amid the mountains, huddled among fallen rocks, shut in by rocky walls; and there was water that ran brawling over rocks, with a sound like sobbing in the night. Suzanne lay there many nights and heard it sobbing always; and when she went on . . . alone . . . the sound of it travelled with her, sobbing still. I think for a while

she was maddened with it and with the emptiness of her arms, for she fell to carrying her lute as if it were a baby, and talking to it as if it could understand her whispered babble. . . .

We know no more. How she made her way to Genoa she never told; it may be that she did not know herself. But there, a few weeks later, her husband walking on the quays heard behind him a familiar song.

The winter it is here, And the roses are dead. . . .

When he looked on her, he did not know her. He had left her young, and this was an old woman, bent and gray-haired, hobbling on sore feet, with a hoarse, rough voice that muttered his name. "Here," she said, holding out the lute, and letting it fall from her cramped hands, "Gaston, here are your sons. . . . "

The lute handle was broken. And long years after, when it was restored, she had the guitar-head fixed in its place. "It must not be the same," she said, "not quite the same."

. . .

Macmillan's Magazine.

BEAST IMAGERY AND THE BESTIARY.

Viollet-le-Duc has said that "of all arts, architecture is certainly the one which has the greatest affinity with the instincts, the ideas, the interests, the progress, and the needs of the people." In other words, in architecture the soul of the people expresses itself, fashioning the stone as with an unseen hand, whether it be in the absolute calm of the gods of Egypt or in the infinite variety of the fretted forms of mediæval France. It was

not the granite of the Nile Valley or the sandstone of France that alone tempered the manner of the Egyptian or the French worker in stone. It was not merely to suggest the greatness of his god or of his king that the Egyptian set up colossal temples or statues, but chiefly to express his innate sense of the immensity and the force of the superhuman laws by which he felt himself to be surrounded. It was the realization of this that put its seal

on his thought and, as a natural consequence, on the formal expression of So, too, in French that thought. mediæval architecture, the dominant idea was the rendering of what was "close to men's lives and their history." We see this more clearly when we consider the Gothic cathedral by the side of such literary creations as The Romance of the Rose. These, although alike made up of intricate detail, yet differ so greatly in their range of expression, that the one, a romance of gallantry, fades away into the past in common with the lovers who fed their souls upon it, and only appeals to us now as a mere literary curiosity, whilst the other is, so to speak, a sublime epic, interpreting both the secular and the religious movements of the age, and suggesting to us, even at this distance of time, their vast And the reason of this complexity. is not far to seek. In literary composition, which is, in its essence, analytic, there is wanting, in an imperfectly developed language such as was that of France in the Middle Ages, the material out of which to develop the delicate lights and shades of sentiment and of thought which are essential to perfection of expression. Architecture, on the other hand, is a synthetic art, and the artist finds ready to hand a concrete material through the medium of which he can express his ideas, the lights and shades, in his case, depending mainly upon the dexterous use of the chisel upon that material. It is because of this radical difference between the two that, amongst primitive peoples, or in civilizations in a state of transition, there is more complete expression in art than in literature.

In the details of the religious architecture of mediæval France, the ideals of the time, with all the chaos and contrast peculiar to an age of transition, are suggested in the Romanesque church and in the Gothic cathedral

alike; Heaven and Hell, the sublime and the grotesque, keeping close company in the mediæval mind. Side by side with symbolic beasts of Eastern ancestry, we find Bible subjects, the favorite ones being "The Last Judgment" and "Dives and Lazarus," subjects so dear to the poor man, to whom the future life, governed as he believes it to be by the law of equality, offers such solace. Think what it must have meant to the down-trodden peasant to see himself, in effigy, in the company of apostles and saints in scenes of "The Last Judgment;" to see not only the tombs giving up their motley dead, but also St. Michael with his scales, ' and Satan with his claws, deciding the fate of trembling humanity, lord and villain alike. Think, too, what it must have meant to him to see rich and poor alike represented nude, in spite of the Church's condemnation of such pagan licence, thus emphasizing yet more forcibly the great law of equality which men were beginning to see faintly dawning on the far-off horizon of the future.

Such representations are indicative of the beginning of a reaction against the limitations set by feudalism and the Church (or rather by the Church as exemplified by monasticism), a reaction induced by the wider range of thought and experience which the Crusades, and contact with the East through travel and trade, had brought about, and also by the encouragement given by the democratic teaching of the Mendicant Orders, and by their glorification of poverty.

The most complete expression of mediæval thought took the form of cathedral-building. In these mighty structures, "where light and shade repose, where music dwells lingering"—monuments of religious enthusiasm and civic pride—all the thought of the Middle Ages took a visible form, expressed either in traditional motives

or in individual fantasies, symbolism mingling with realism. It is to the cathedral, then, that we must turn if we would understand the evolution that was taking place in life and art.

French religious art, as part of the general evolution of Christian art, had adopted pagan motives from both Rome and Byzantium, adapting and developing them in accordance with its own spirit. It is especially through the animal imagery, both symbolic and grotesque, which was the outcome of this process, that we must seek to understand the religious as well as the social and satirical spirit of the age, and how closely these elements were interwoven. At no time, and in no country, perhaps, did symbolic animals play a more important part, both in literature and in art, than they did in the Middle Ages in France. The beast confronts us everywhere, greeting us at the church portal, on cornice and capital, in painted window and illuminated manuscript, in sermon and song, in fable and romance, and in its own special province, the Bestiary, or Book of Beasts, aptly called "the Christian symbolic menagerie of the Middle Ages." In many of these instances the beast was chosen to represent virtue as well as vice. It was not till the later Middle Ages that the beast-carving in the sanctuary, like the beast-fable in literature, was made use of as a form of satire, behind which the exponent of social wrong, whether artist or minstrel, could, so to speak, hide himself, and give unbridled expression to the growing want of respect for those in high places.

It may well be asked why beasts should have been almost universally chosen to symbolize either virtue or vice. Whilst the mystic Eastern thinker might suggest, as a possible answer, a belief in the doctrine of metempsychosis, the more matter-of-fact Western might theo-

rize, as did Lessing, that as animals retain their natural characteristics, they are better adapted for the purpose than is man, modified as he is by civilization.

Long before the time of written history, animal imagery played a part in men's lives, though what that part was it is impossible to determine, even when we have carefully examined the animal forms scratched on bones found in caves once inhabited by primitive man, which tempt us to ask the question whether they represent totems, and whether totemism was the origin of the beast in art and in literature. But we hesitate even to surmise, in face of the warning of a well-known writer that we cannot be too cautious in speaking of totems and totemism. At all times, and in all countries, a love of the marvellous is to be found in the human soul, and it is in this connection that the history of the belief in symbolic animals is interesting.

The strange, fanciful beast-carvings found in Christian architecture were, in great measure, the outcome either of Oriental tradition through unconscious copying or irrepressible semiconscious paganism, or of treatises on symbolic animals dating probably from the second century A.D. The most important of these treatises, in that it became the one from which all later ones drew their inspiration, was the Physiologus, or Naturalist, compiled from many sources by an Alexandrian Greek. This was condemned by the Church in the fourth century, but was reinstated by Gregory the Great, and from the seventh to the twelfth centuries was regarded as a Christianized summary of natural history, calculated both to teach and to edify. It formed the basis of the French bestiaries, and its influence may be traced in many mediæval works, the most celebrated perhaps being the Speculum Naturale of Vincent de Beauvais, the Speculum

Beclesice of Honorius of Autun, and Li Tresors of Brunetto Latini, the friend and master of Dante. It served, through these media, to inspire the mediæval artist as well as the mediæval poet, and it is by knowing something of its quaint conceits that we must seek to understand both the one and the other. At the same time it must not be inferred that all sculptured objects, whether natural or grotesque, made use of to beautify either cathedral or church, were necessarily symbolic. That there was frequently a desire on the part of the mediæval artist merely to express life in its various aspects, without any ulterior motive, is evident from the world of birds and beasts and foliage which manifestly were carved for the sole pleasure of representing animate nature.

The natural history of the Physiologus was doubtless based upon Aristotle's History of Animals and Pliny's Natural History, supplemented moral reflections founded upon current opinion and ancient tradition. a treatise would appeal in an especial . manner to the mediæval mind, imbued with a love, almost amounting to a mania, of accumulating and arranging facts, or so-called facts. The widespread popularity of the work is evidenced by the many translations of it-Ethiopic and Icelandic amongst others-made between the sixth and the thirteenth centuries for peoples as far 'asunder in sentiment as in local habitation. That such a treatise, with a symbolism at once subtle and simple, should have appealed to the man living in hot sandy wastes as well as to the man contemplating ice and perpetual snows, is but another proof that the human soul is fundamentally the same everywhere in its craving to penetrate into the region of the mysterious and the marvellous. These translations interest us to-day,

not for this reason alone, but also because they are one of the means of bringing us somewhat into touch with the literary and poetic feelings of peoples we should otherwise know but little of; for although only translations, and sometimes of mere fragments only, the translators have contrived to give a distinctive character to their work. The Anglo-Saxon version made in the eighth century (which, having been rendered into English, is easy of reference) proves to us, by its poetic beauty and vigorous expression, that the land we now call England was not entirely abandoned to war and servitude, but that the torch of the Muses, though perhaps flickering but faintly, was still alight.

When we open the Physiologus or a French bestiary, a motley procession of beasts and birds, and of those "that glide beneath the wave," seems to pass before us, the illustrations of which at once attest their Eastern origin, recalling by their forms, as well as by their attitudes, the wall decorations of Theban tombs. But considerations of space make it impossible to refer here to more than one or two examples of the members of this menagerie which are mentioned and moralized upon; and therefore the lion, the eagle, and the whale, as typical representatives of the three elements, earth, air, and water, have been chosen to give some idea of the material by the aid of which the mediæval artist, as well as the mediæval poet, stimulated his imagination.

In examining these types, the Physiologus and the French bestiaries will be considered together, they being the same in substance, though the symbolism is more developed and elaborated in the latter than in the former.

The Physiologus, in common with the bestiaries, begins with the lion, the king of beasts, the emblem of Christ, and the most frequently used symbol

of the Christian menagerie. To the lion is attributed three characteristics, first: that when he is pursued he obliterates his track with his tail; secondly, that he sleeps with his eyes open; and thirdly, that the cubs are born dead, and are brought to life on the third day by his breathing upon These characteristics naïvely explained and commented upon in the French bestiaries, the earliest of which was translated about 1130 A.D. by the Anglo-Norman clerk Philip of Thaon, for Aélis of Lorraine, the second Queen of Henry the First of England. The opening sentence, introducing the work as "a book of science," shows us the mediæval attitude towards these, to us, childish though sometimes ingenious, moral reflections. It begins thus: "Philip of Thaon into the French language has translated the bestiary, a book of science, for the honor of a jewel, who is a very beautiful woman-Aélis is she named, a Queen she is crowned-Queen she is of England: may her soul never have trouble!" But after this courtly opening there is little elaboration, perhaps because Philip of Thaon had but a limited gift of imagination, or was more of a courtier than a moralizer, or perhaps because the royal lady at whose command he labored, preferred her spiritual food in as concentrated a form as possible. Owing to this poverty of expression, quotations to illustrate the manner of mediæval moralizing will be taken from Le Bestiaire Divin, the most elaborate example of its kind for inventive thought, and one giving an idea of the boredom which the good folk of the Middle Ages could inflict upon themselves. It was written about the beginning of the thirteenth century by one William, a clerk of Normandy, who begins, as was usual, with the king of beasts, the first characteristic of which, as before alluded to, is there said to symbolize the

incarnation of Christ, which "truly he did covertly"; and the writer goes on to say that

the meaning is very clear. When God, our sovereign Father, who is the spiritual lion, came by his grace on to this earth for our salvation, so wisely veiled he his coming, that the hunter knew not that he was the source of our salvation, and marvelled how he came amongst us. By the hunter we must understand him who makes man to do wrong, and who pursues him in order to destroy him; he is the Devil, who desires evil.

The second characteristic symbolizes that on the Cross it was the man Christ, and not the God Christ who suffered:

When the lion [Christ] was put upon the Cross by his enemies the Jews, who judged him wrongfully, his humanity there suffered death. When the spirit quitted the body, the man fell asleep on the holy Cross, but the Godhead kept watch there. And think of him in no other way if you would rise again. For the Godhead could never be touched, or felt, or scourged, or beaten. Mankind can wound the man without injuring the Godhead, which shall be shown to you by a parable which can leave no doubt. Cut a lofty and spreading tree when the sun is shining, and in the rent of the first splinter you will see a ray of the beautiful sun; and, as the rent increases and the sunbeams extend, nowhere can you touch, injure, capture, or hold the You can cut down the whole tree without injuring the sun at all. Thus was it with Jesus Christ. manity, which he took upon him for our sake and for love of us, and garbed himself in, suffering trouble and labor and death, of this the Godhead felt naught. This you believe if you do well.

Of the third characteristic, which was a favorite symbol of the resurrection of Christ, as well as of the general resurrection, the writer says:

When God was placed in the tomb, for three days only remained he there, and on the third day the Father raised him from the dead by breathing upon him, even as the lion breathes upon his little cub. Now I have told you of the lion; the truth about him is written.

The tradition that the lion sleeps with his eyes open may partly account for its effigy being placed, as is so often the case in Romanesque and Gothic churches, over the entrance or on either side of the portal, as guardian of the sanctuary; although the original idea of making use of a lion's image in such positions was doubtless derived from the traditions of ancient civilizations, such as those of Assyria, Egypt, and Greece, where lions, as guardians of tombs and gates, are constantly found as emblems of strength and prowess, and as inspiring fear.

Although not mentioned in the bestiaries, it is of interest to note that the same beast may symbolize entirely different principles, just as it embodies different qualities. The lion in some instances is typical of the Devil, who "as a roaring lion walketh about seeking whom he may devour;" and thus on some early tombs we find the sculptured effigy of the deceased person with the feet resting on a lion, to indicate triumph over the powers of hell, whereas, on later ones, the lion in the same position symbolized strength and bravery.

In mediæval literature, the characteristics attributed in the bestiary to the lion are applied in sundry and strange connections—sometimes to the hero, as in Wolfran von Eschenbach's poem, where Parsifal and his brother are compared to a lion's whelps "roused to life and energy by the roar of battle"—sometimes to the lover, who could be brought back to life by the voice of his mistress, as the breath of the lion brings to life its young—sometimes to the counsellor, who advises his lord, when he has erred, to blot out

the remembrance of his error by repentance and by good deeds, just as the lion, when pursued, obliterates his track with his tail.

The tradition of the eagle renewing its youth, and testing the capacity for endurance of its offspring, is one of the most poetical legends to be found in the bestiary. It opens quite simply:

The eagle is the king of birds. When he is waxed old, in a marvellous manner he becomes young again. When, in old age, his eyes have grown dim and give him pain and trouble, he seeks, when the sun is shining brightly, a clear and pure spring whence the water issues fresh and sparkling. First he soars very high into the air above this spring, towards the ray-emitting sun. When, aloft there, he comes into the heat, he fixes his eyes on the sun's rays, and so long does he look on them that his sight is quite seared. When his eyes begin to burn in this heat, and likewise his wings, then he descends thence into the spring, there where the water is most sparkling and clear, and therein he plunges three times until he is, as he well knows, quite refreshed and rejuvenated, and healed of his old age.

Such keen sight has the eagle, that if, circling about in the air above, he is as high up as a cloud, he can nevertheless see a fish swimming beneath him in the river or the sea. Then he swoops down to seize it. He fastens on it, and so combats with it that he drags it to the bank by main force. Another characteristic is strange. If the eagle is neither sure nor certain that some of the eggs have not been changed, and others put in the nest, before the fledglings can fly well, he takes them up into the air towards the beams and the radiance of the sun when it shines brightly. The one that can look steadily at the rays of the sun, it loves and cherishes dearly, and the one that has not the strength to gaze upon its splendor, it abandons as a bastard, and never more concerns itself about it. The eagle, which thus rejuvenates itself, sets us a good and beautiful example, for in like manner must labor the man, be he Pagan, or Jew or Christian, who would renew

When the eye of his his old garment. soul is so dimmed that he cannot see sure salvation, then should he seek the spring which is divine and life-giving. This spring is baptism, which quickens all whom it cleanses. For this I call to witness the Gospel, in which I find For this I call it written that those who of water and of the spirit are not thus cleansed, are not re-born or made pure, and can in no way enter the heavenly kingdom. He who is baptized in this clear spring in the name of the Father, the Son, and the Holy Ghost, surely, without gainsaying, can see and look upon the true sun, which shines clearly. This sun is Jesus Christ, the gentle and the godly one. He who puts his trust in him is renewed by looking on him, just as is the bird who fixes his eyes on the other sun, which holds all the elements in their place, and which created all this world and all things that are.

Allusions to the tradition of the unflinching gaze of the eagle upon the sun are constantly to be met with in mediæval literature, and are employed in various ways to make them fit into the manifold circumstances of life; but the only instance which will be recalled here is that in which Dante, about to enter the first Heaven, sees Beatrice gazing upon the sun, and exclaims, "Never did eagle so fix himself thereon" ("Aquila si non gli s'affisse unquanco"), and, having himself so lately faced the fiery ordeal of Purgatory, the final cleansing by fire that was to fit him for Paradise, he adds, "and I fixed mine eyes upon the sun, transcending our wont" ("e fissi gli occhi al sole oltre a nostr' uso").

Perhaps the most dramatic of all the traditions to be found in this bestiary is the story of the whale, whose sudden plunge, with its human freight, into the depths of the ocean, still sends a thrill of horror through the mind.

To-day I will recount to you a great wonder of the deep. There is a marvellous monster, very knavish and very dangerous. It is called *Cetus* in Latin, and is a bad neighbor to mariners. The

top of its back resembles sand. When it raises itself slowly in the sea, those who must needs sail by verily believe it to be an island, but hope deceives On account of its size, they make for it for refuge; and because of the tempest by which they are driven, they think themselves to be in a safe place, and throw out their anchors and their bridge, kindle a fire, and cook their food, and in order to make fast their ship, they drive a large stake into the sand, which seems to them to be land. Then they kindle a fire, I pledge you my faith. And when the monster feels the heat of the fire which burns on its back, forthwith it plunges with great suddenness down into the depths of the sea, and makes the ship to sink with it, and all the crew to perish. In like manner are deceived the wretched, miserable unbelievers who put their trust in the Devil, and who, when their captive soul is sad, indulge in dalliance and tarrying, which sin inclines to. At the moment when they least expect it. comes the cursed one, whom may a terrible fire consume. When he feels that they are clinging closely to him, suddenly he plunges with them straight down to the nethermost hell. certainty those who go thither perish.

In this graphic piece of word-painting, the whale represents the Devil, and the sea the world. The sand on the back of the whale is the riches of this world, the ship is the body, which should be under the control of its steersman, the soul. Thus the Devil allures man to his ruin; for when he puts his whole trust in the pleasures of this world, suddenly, and without warning, the Devil drags him down to destruction.

Although so far we have only considered beasts in their connection with the teaching of the Church, passing allusion must be made to the other roles in which they played a part in the sculptured details of the Christian temple, where they are constantly to be met with as grotesques—either as grotesques pure and simple, or as forms of satire. It was the encroachment of the beast-image within the sacred

precincts that brought down anathemas upon all imagery from St. Bernard, who, when he founded the Cistercian Order, allowed no sculptured representations either within or without the sanctuary. St. Bernard was the incarnation of the religious enthusiast and the political agitator, and withal a twelfth-century puritan. With his despotic intellect and his despotic will, he, in his zeal, like the Puritan of later times, could find no place for the weaknesses of human nature, notwithstanding the fact that the Church had always upheld the use of imagery to assist, as said a kindly Bishop of Auxerre in the twelfth-century, "those who were likely to be distracted by vanity or weariness."

As a rule, the word "grotesque" conveys to the mind the idea of something abnormal and whimsical; but Ruskin, in The Stones of Venice, has given us the key to its interpretation when he tells us that "in true grotesque we shall find the evidence of deep insight into nature." It is only by ourselves having, in some measure, this deep insight into nature, that we can in any wise appreciate the spirit of the grotesque; for the essence of things is always veiled rather than outwardly expressed, just as the spirit of the universe is concealed beneath outward appearances. Consider the gargoyles on cathedral or church-strange, unearthly creations for the most part, petrified, as it were, for centuries 'twixt heaven and earth. How ludicrous some, how terrible others! And yet, when we examine them, how full of hidden meaning we find many of them to be! What a depth of insight into nature must many a nameless stoneworker who chiselled these monsters have possessed!

But, passing within the cathedral or church, we there find the grotesque lurking in out-of-the-way corners under the subtler guise of satire. Perceiving

how skilfully animal symbolism could be adjusted to, and used for enforcing, the Church's dogmatic teaching, the artist further conceived the idea of using the beast-image under various forms, to satirize the evils of the time, whether ecclesiastical or feudal, although much that might be taken for conscious satire was often the mere unconscious adaptation, for the sake of their decorative qualities, of oft-repeated motives, used in the spirit of the early Italian painter who decked his Madonnas' gowns with broideries of Arabic characters, or the semblance of such.

The beast-image, like the beast-fable, is one of the oldest forms of satire used to point a moral or to condemn a wrong, and was suited to times when such truths could not with safety be too openly demonstrated. It is this expression of satire, this veiled manifestation of the undercurrent thought, which was the dominant note of the age, and which gives us the real clue to a right understanding of the spirit of the time, and of all that was to emanate from it. Satire, thus expressed in architecture, as well as in many other ways, was one of the earliest signs of a movement at once subtle, gradual, and varied. Progress in social life is the result of two contrary forces-enthusiasm and criticism-the one positive, the other negative; the one elevating ideas and beliefs, sometimes abnormally, the other undermining and wearing away all that is useless, overwrought, and extravagant in these ideas and beliefs. Satire, as a form of criticism, is a negative force. It does not create-rather it disintegrates, but, whilst disintegrating, it transforms and renews. The effect of criticism in the social world may be compared to some chemical process in the natural world, where matter, no longer serving its purpose under one form, is released in order that it may

be recombined into something suited to other conditions. It is the satirical, critical spirit of the Middle Ages, the disintegrating force which exposed ideas and superstitions no longer in

The Nineteenth Century and After.

harmony with awakening desires and aspirations, which was one of the factors that made the Renaissance possible.

Alice Kemp-Welch.

TATA.

TRANSLATED FROM THE FRENCH OF JEAN AICARD.

IV. THE REPENTANT PRODIGAL.

Pierre was enfolded successively in the arms of the three beings whose lives were bound up in him. overwhelmed him with caresses and questions, and waited for no reply. Adèle held one of his hands; his mother had clasped the other in both hers; while Bounaud felt his arms and shoulders, and examined his physical condition generally, as though he had "Good!" was his been a race-horse. conclusion. "You've got some muscle, You're a trifle pale, at all events! but that's natural. So are we. only emotion. But you haven't pined away; quite the contrary. gained, and that was what I expected. You're pretty fit; keep it up. do you prefer to eat? Chops are what you need; plenty of juicy meat and all the brains you can get! I have read somewhere that folks who go in for brain-work should eat brains. muscle, bread will do. It's not easy I suppose for you to get wine-that is to say, good wine-down there. I'm sure they poison you with their drugged stuff! How do you heat your room? You never tell those things in your letters. But then you never What we want to write nowadays. know are the details of your daily life. I daresay it seems absurd in me to ask and may bore you to tell. Never mind!

*Translated for The Living Age.

A fellow ought to do something for his parents; you ought to write as you did at first. It's no great task. Just take your pen and paper and write whatever comes uppermost, not bothering about style! Write as you would It must be devilish cold in that dirty Paris for a man from here. Nobody knows what a fine country this is who hasn't been to other places. Our Toulon painter, Courdonan, went to Paris last year. Well, he simply couldn't stand it, and he came back to his old Toulon to warm himself in the clear sunshine on the seashore. Follow his example and stay with us; we'll do anything you say. They shall bring out your operas in the great theatre; you shall give concerts. There is a local poet here whom they are beginning to talk about. Well, he is loved here, he is admired here; he doesn't have to go to Paris. George Sand writes him letters. It's Charles Poncy, the mason. What does he want with Paris? Paris is a Moloch which devours our little ones-a hideous mon-I loathe Paris; so does your mother and your sister too. It is Babylon, the city of perdition; that is what the priest has taught her to call it; and the priests aren't always wrong. You don't tell me how you keep warm. Your room must be very small. stove is a bad thing; it gives one the headache. A grate is more expensive and doesn't give out much heat. We

worry ourselves about all these things here, while over yonder you are drudging or guzzling, which is it? Both, very likely."

Bounaud said all this in a breath. He hardly knew himself, and had completely lost his self-control. All his dumb resignation, all the stubborn patience of so many years had gone down in a thundering avalanche. The women, though so absorbed in their contemplation of the dear wanderer, were yet disturbed by his father's volubility, and two or three times exchanged glances. He must, they thought, be ill. But no; what he said was all true and expressed exactly the tumult of their own thoughts.

Bounaud went on:-"I know well enough that a young man has to amuse Good Lord! You can't work all the time, though my father thought otherwise. But he was certainly too stern. I made up my mind to pursue another system, that of indulgence. Why should you abuse it? Be reasonable. I give you lots of money, and willingly; but seriously I can't and won't touch your sister's portion. We'll think about it; we'll talk it over all together. I'll ask Audenard, who is our best lawyer. We shall find some way! We will manage! A vocation like yours cannot help succeeding. Bernard Palissy burned his furni-His family didn't like it, but when they had no chairs they sat on the floor, and Palissy became famous. So will you be. You're bound to be so. Your honor is pledged, and so is mine. And so you didn't dare come home because you had not yet won your laurels! It was a natural feeling-proper pride; I understand it' But you conquered your objections and that was best. You conquered yourself, and came! Good! Excellent! Your love for your parents got the better of everything. It was like you. That's the boy I know. Oh, but it is good to see you!"

At last he had managed to tear him from the detaining grasp of the two women, who were now standing a little apart, locked in one another's arms in motionless delight. He had monopolized his son, making him sit down exactly in front of himself, and he was talking to him, his two hands resting on Pierre's knees.

"Sometimes when you didn't write, we used to fancy that you were ill, and then our hearts died within us. We longed to set out, and go to you, and take you by surprise; but we couldn't. Paris is too far and too big. One must feel so alone in a crowd of people who know nothing about you. Then your mother would go off by herself, and so would Adèle, and cry. did not actually see them do it, but I knew it well enough. They'd shut themselves up in their own rooms and think that I knew nothing about it. More fools they! They weren't at hand when I wanted them. thing was topsy-turvey, and I used to complain and scold and curse you-all in the way of affection, don't you understand?"

He began to laugh boisterously; the laugh of a workman contented with his job. It was true that but now, in his anger, he had been ready to curse his son, his adored son. And now that the beloved being was there, the idea seemed irresistibly comic.

"Just fancy— No, it's incredible. Just as you came in I really was cursing you, and no joke about it either, by Heavens! Isn't it funny? I suppose it was because I felt so hurt at the thought that you did not care to come and see us. First I was distressed and then irritated, and then at last I simply couldn't stand it. My patience was exhausted. I could have given you a thrashing—had it been possible to thrash a boy at such a distance!"

He grew serious and concluded:-

"And then my boy appears; my heart rebounds; I take him in my arms and am happy." His eyes grew soft as he gazed upon him and he added gently:—

"The blessèd monkey's twenty-two; he's a man, a great, splendid, strong man, taller than his father, but as dear to his heart as when he was a little baby. Nay, dearer! When they are babies our hopes are bound up in them, but we don't really know them. We can't tell how they are going to turn out. We hope everything, but We watch we fear everything, too. their gestures, their actions, their words, and we wait-for-we know not what. Later there are our memories of them to bind us. Affection is a plant; when it is full-grown it has terrible roots, like claws, which curl and twist; and within them there lies your heart, squeezed hard, bleeding, a prisoner; and the claws tear it, and how can you get away? A mother loves in that way from the very first, they say. We don't. It comes to us little by little, but once there it is terrible. It is too much for me; it puts me beside Honestly, just now I was really angry with you! Is it not droll? And it has fairly made me ill. I'll tell you about it later. But you are here and nothing else really matters. The rest is past, and all is going to be peace and joy once more,"

He paused for a moment, then shouted to his wife, who stood as if petrified:—"Hullo, Thérèse! What are you about?"

Mme. Bounaud started as from a dream, while her husband roared out:—

"He's been there a quarter of an hour and we go on talking, talking, without even asking him if he is hungry and thirsty. Eight days in a diligence! He must be dead. That's not like my wife. See here, my boy, your mother never interferes or suggests

anything, but lets me go on in my own way, making a fool of myself, as I know perfectly well that I am doing now, and all because of you. we all stand and look at one another, and never open our lips, because we are so absorbed in you! A bottle of old wine! I am going down to the cellar. Come along with me, Pierre; I don't want to lose sight of you! But no-stay with your mother! Or. better still, we'll all stay. I fancy there's a drop of old wine in the cupboard. And ham, and olives, and eggs. eggs? Good, fresh eggs? Are you still fond of them? There's nothing more What a fool I am; I bewholesome. lieve I'm losing my wits! I'm going to fall. Give me your arm, Pierre."

They led him tottering to his chair, drunk with joy, with anger too suddenly checked, with gratitude dashed by a great fear for the future; overpowered by the returning rush of hope, apprehension, anxiety, that descended upon him like an avalanche. They all gathered about him, and once more he pulled himself together:—

"If you think I'm going to be such a fool and coward as to faint away now! Turn sick now, like a woman, or a white-livered puppy! You don't understand. You don't know Gustave Bounaud, Bounaud senior. Faint? No. This is no time for fainting."

And with a flourish in which were summed up all the love, and pride, and ambition of his life, he added:—
"Make Pierre Bounaud wait for his dinner? The real Bounaud—the great Bounaud?—Oh, my dear, dear boy."

He drew the youth toward him impulsively, and hugged him tight. He sobbed, but his eyes were dry. "If I could only weep it would do me good, but I'm suffocating."

The women drew near again, and he called out lustily:—"Fetch the bread, the cloth, a napkin, coffee, liqueurs—whatever we've got that's good—the

best the house contains! Leave the old man in his chair to die of joy, and take care of his boy, the one and only Bounaud. Old folks are no good! Old gammers, like M. de Lamartine! Young ones are the future—everything. Will you hurry up and get your son something to eat, Thérèse? Adèle, I shouldn't know you! But it is happiness that paralyzes them. Well, well! I must lay the cloth myself, since the women are of no use!"

Pierre found all this incoherence, these transports of affection, these crazy speeches, excessively vulgar. Men of the world, of course, have more self-control. People of culture say less, and have a better vocabulary. But little recked Father Bounaud of all this. He had never pretended to be a gentleman.

Nevertheless, though justly disturbed by his father's extravagant demonstrations, Pierre was well-used to the elegant emotions of the first-class theatres, and he felt it to be his duty to kneel at his parent's side. He even put an arm about his neck and laid his hand upon those of the elder man.

The two women in their bewilderment, still whirled about like spinningtops, bumping into each other, finding nothing they wanted, unable to tell a tumbler from a salt-cellar.

"They're monstrous awkward, are they not? Folks who can't serve any better than that ought to have servants, eh? Oh, but you don't understand! I must tell you; you will be touched. Your mother has given up her servant, and she's been sending you the money she saved on her wages. They do their work very well, as a general thing, those two, only to-day they are so excited, and quite natural too!"

The table was laid and Pierre took his seat, prepared in his turn to offer a few remarks. "Not a word," cried Bounaud, "don't tire yourself! Eat first and then we'll see! There's plenty of time!"

Pierre, delighted at bottom to put off his explanations, and feeling quite unable to adopt his father's impassioned tone, began resolutely and silently to eat.

The three others, from their places, admired him, watched him, feasted their eyes upon him. His mother from time to time clasped her hands and raised her eyes to the ceiling without a word; Adèle fixed her eyes now on her father, and then on her mother.

When Pierre had finished his dinner, he took out a cigar and lit it. The cigar was chosen from a handsome case, and his air was so self-satisfied, he held it so elegantly, with fingers so artistically supported upon the table's edge, with so much affectation in his lightest movement, that there came to the elder Bounaud as in a flash, a sudden perception of the young dandy's real worth; of the selfishness and vanity of this young lion with the flowing mane.

"Now let us have a talk," said Pierre when he was comfortably settled in his arm-chair and puffing thick clouds of smoke from the heart-shaped orifice of his mouth. The women, who had hardly, as yet, ventured to embrace him, looked on with intense admiration, in which there mingled nevertheless a sort of mysterious terror.

And then it was that the father broke down. He began to cry, silently at first, then without restraint, gasping like a wounded bull. The pangs of a father deceived are sharper than those of the deceived lover, but of the same nature. You think you are walking on solid ground and there at your feet yawns an abyss. All was falling away from him. He seemed to himself to be sinking into a great black pit, shoreless and bottomless.

His wife did not understand, for she

did not judge her son. Was he not a man, another Bounaud?

Pierre, somewhat embarrassed by the situation, thought to himself: "Really, all this is very ridiculous!" and though he told himself that it would be appropriate to show some signs of emotion, he couldn't manage it, being restrained by a sort of physical sincerity, not infrequent with thoroughly selfish men. He smoked and stared at the pattern on the sash-curtains. His mother brought him coffee.

"As a matter of fact, father," said Pierre, without much conviction, but doing his best to try and appear in sympathy with the emotions which he had aroused, "a shock of joy, as I very well know, is really painful. It is so violent, you know, but it is nothing. He will be all right in a minute, Adèle."

Adèle went over and put her hand on her father's shoulder, while the elder Bounaud did the most extraordinary thing yet. He took his daughter's little hand and kissed it. Then, hastily brushing away his tears with the back of his own, he rose, took his son by the arm and said in a steady and perfectly natural voice:—

"Come into the parlor, my boy, and let us have a talk. You must have things to say to me and there's no time like the present. I am ready."

(To be continued.)

Les Annales.

A FEW OBSERVATIONS ON MODERN TRAGEDY.

The average reader will always tell the librarian of his circulating library that he wishes a book with a happy ending: he will, in extreme cases, even return every volume which cannot be recommended as "coming right in the end," with the emphatic remark that he never reads unhappy books. The fact is that he likes, and quite rightly, to read a description of what life should be, rather than of what it really is—he resents the more truthful picture.

But literature worthy of the name cannot be made to order; and the best writers are no more affected by the protests of thousands of average readers than the incoming tide might be. The author who deliberately caters for his audience must be content to be classed as a tradesman only, and must renounce the title of author without a murmur.

It is a curious fact that in spite LIVING AGE. VOL. XXI. 1100

of the demand for cheerful books, the bias of literature is towards tragedy. This can be easily accounted for: books—again let me add worthy of the name—are written by men who think, and to thoughtful men life must always seem very sad, hence the sad books.

By a sort of apostolic succession the literature of Tragedy, which began long ago with the first story-tellers, has descended to our own times, changing in form from generation to generation, yet keeping its distinctive note unmistakably through every phase of treatment. For the great tragic subjects cannot alter—man's fate, man's struggles, man's doom; these, the very roots of tragedy, can suffer no change.

But true as this is, it is curious to notice how differently the old subjects are handled by each generation. I say generation instead of writer, because the writer is only the utterer of the

thought of his times; he is formed by it, and gives synthetic expression to the conclusions of thousands of other men who have thoughts but no words. Now from time to time curious waves of change pass over the thought of These, to the careless onlooker, seem to be sudden changes; but they have really been brought about very gradually, and are the result of long processes of reasoning and comparison carried on not by one mind but by After one of these thoughtmany. waves has washed over a generation, it will be found to be viewing the identical problems which exercised the preceding generation from an entirely new standpoint. The problems of life which form the subject of all tragedies cannot, as I have said, alter; but our way of viewing them may suffer extraordinary changes. I wish, if possible, to show some of the varieties in our modern view of tragedy.

And, first of all, what is tragedy?

It is (says the dictionary) a species of drama, in which the action and language are elevated and the catastrophe sad. But for the purpose of this article it may be very simply defined as a presentation, whether in the form of drama or novel, of the dark, unexplainable side of human things.

Every son of Adam has, at one time or another, had reason to question the cause or the meaning of his own sorrows; but before the tragic sense which produces a great tragic writer can arise, this questioning spirit must be turned away from a man's individual miseries and focused on the woes of the world. For to attain to the first rank of tragic writers it is not enough that a man should suffer and then reproduce in literature his own torments; but it is absolutely necessary that he should have so entered into the sorrows of the race as to be able to create types of each grief which he writes about. You will quickly see that no one individual experience can ever be universal enough to include the griefs of the whole world, yet that insight may supply the lacking knowledge. This insight for grief not his own is the very hall-mark of tragic writing—it is the tragic sense, and is the possession only of the best writers. Shakespeare, for instance, has so much of the tragic insight that he can write as convincingly of Lady Macbeth's remorse as if he had himself committed murder and shuddered over his guilt.

The possession of this tragic sense, then, opens the eyes of certain men in each generation to see more clearly than their fellows the grievous side of existence, and this clearness of vision leads them to all manner of questionings. It is in the answering of these that ancient and modern tragedy first sharply divide, for the main contention of ancient tragedy was that the ills of life were sent us from the gods, while the great object of our modern writers is to show that these evils are the inevitable outcome of natural laws, and that thus we are very often the authors of our own miseries. An example of the old and new methods will perhaps make this point more clear.

As a typical instance of the ancient tragic method, let us take the worldknown tragedy of Edipus. all men know, the story of a cursed A curse rested on this house; it was prophesied that Œdipus was to kill his father, and though, to falsify the prediction, the boy is separated from his parents and grows up a stranger to them, he cannot escape his fate, so he meets his father all unawares, fights with him, and kills him. Then, farther to fulfil his dark destiny, Œdipus returns to his kingdom, meets his mother, Jocasta, without knowing who she is, marries her, and becomes the father of her children. curse is fulfilled, but it descends with the same relentless force upon the innocent children of the unnatural marriage; their tragic lives and deaths are chronicled in the other plays of the series.

Now, what is the meaning of all this ghastly story? It is to tell the great riddle of the universe in dramatic form: the undeniable, horrible fact that a curse—a fate—a destiny—what you will, rests on men; that a tremendous Power, not themselves, is always either warring against them or working for them. And what, according to Sophocles, is Destiny—this moulder of men's lives? It is the will of God—or rather, in the speech of these times, of the gods.

Behind this mystery he cannot penetrate; why the gods turn men to destruction he does not know, unless it be "for guilt of old." There is a note of uncertainty, even in this explanation, when Œdipus speaks of

Sad calamities

Which I, poor wretch, against my will endured,

For thus it pleased the gods, incensed, perhaps,

Against my father's house for guilt of old.

It seems almost, as Dronke points out, that Sophocles wished only to exhibit this profound mystery of divine over-ruling in the affairs of men without making any attempt to explain it. Darkness is all around man's path, by his showing:

Ah, race of mortal men,
How as a thing of naught
I count ye, though ye live!
For who is there of men
That more of blessing knows,
Than just a little while
To seem to prosper well
And having seemed to fall?
With thee as pattern given,
Thy destiny, even thine, ill-fated Œdipus.

I count naught human blest.

Œdipus is to Sophocles typic of the human race: Search where thou wilt, thou ne'er shalt find a man With strength to 'scape when God shall lead him on

he says, and the whole meaning of the tragedy is to be found in these words. The puzzle is, to discover why God leads man as He does into darkness and not into light. If you wish to illustrate anything, you will always do so more forcibly by taking an extreme instance for your illustration; and Sophocles acted on this principle when he chose the story of Œdipus as an illustration of the terrible workings of that power which we name Destiny.

By a series of all but impossible contingencies the characters of the play are brought into the desired situation, than which nothing more ghastly could be imagined. This is the method uniformly followed in ancient Tragedy. The old plays are full of these violent, frightful situations, undreamed of by modern writers. No weak concession is made here to the happy ending preference of readers, for when in the hands of master writers readers must learn to take what is given them. With that inspiration for the truth of Art, which we seem almost to have lost just now, the older tragic writers recognized that genuine tragedy must begin as it is to end, and end as it had begun. The modern trick of trying to let a ray of light in upon the scene at the end was unknown with them. Their plots are ghastly beyond description-a cataclysm of horrors gathered round the doomed man who is to illustrate the dark ways of Fate-he is made to marry his own mother, eat his own children, or some such horrible impossibility. But to create these situations it is necessary that the writer should make a personality of Destiny; that he should, as it were, see this power deliberately moving the pawns on the chess-board of life at its will. This

is what the old writers wrote to prove; and it is exactly what the modern For two mind hesitates to admit. quite impersonal powers are now supposed to be the arbiters of our poor fortunes-these are circumstance and heredity. With these impersonal powers there can be no possibility of intervention, and this conviction has robbed many of our modern tragedies of much dramatic flavor. In the older drama there was always at least the possibility that Destiny might be appeasedthat man might struggle and supplicate, perhaps even wring from this Power that moved the world some mitigation of his agonies. But to pray to circumstance would indeed be futile, and to entreat the great Ghost Heredity vainer still-so the modern drama looks for no surprises. We are, in fact, becoming too great slaves to probability, with a corresponding loss on the dramatic side.

As a perhaps rather glaring instance of modern tragic methods which are directly opposed to the ancient tradition, Ibsen's *Ghosts* may be selected. Here is the plot:

Oswald, the hero, comes home in bad health to his mother, Mrs. Aveling's house. In the first act the reader has been told that Oswald's father had led a dissipated life, but Mrs. Aveling has always concealed this fact from her son. The boy returns to tell his mother the terrible verdict of a doctor who attended him when he was ill—his constitution is hereditarily tainted and he will go from bad to worse. He has decided that should his former symptoms return he must end his life, and he explains this to his mother in a scene of horrible power.

 O. You must come to the rescue, mother.

Mrs. A. I?
O. Who is nearer to it than you?
Mrs. A. I, your mother?
O. For that very reason.

Mrs. A. I, who gave you life?
O. I never asked you for life. And what sort of a life have you given me? I won't have it; you shall take it back.

The poor mother is in despair-she sees the truth of his words, yet shrinks from the act which he urges. play ends at the moment when Mrs. Aveling has to make her decision. Oswald is, as the doctors prophesied, stricken at last. His wits gone, he sits stupidly in his chair begging for "the sun, the sun." The reader is left in doubt as to whether Mrs. Aveling does or does not kill her afflicted child. Well, here is tragedy indeed, of the most piercing quality; but you will notice the extremely modern note which is struck throughout. This is no tragedy of God's making: it is the work of man. The whole mechanism of the tragedy is dissected before us: "This is how misery is manufactured." Ibsen seems to say, and with professional calm he exhibits the process to us. There is no veiled figure of Destiny in the background here, no pressure of circumstance; the whole situation is quite easily and plainly accounted for by the gross selfishness of the parents who thought only of themselves and forgot the child who might have to bear the burden of inherited disease. What in olden time would have been attributed to the gods is now entirely attributed to man. Æschylus in the Agamemnon asks:

What with mortal man
Is wrought apart from Zeus,
What of all this is not by God decreed?

And Ibsen would boldly answer, "Much of it." He has little patience for the man who would (so to speak) make God responsible for his sins.

Ibsen is, in fact, more of a moralist than an artist. Certain ideas possess him like a mania—the inevitableness of character, man's incapacity to escape from himself, and the huge burdens laid upon the innocent by the guilty. These ideas have not only taken possession of Ibsen but of our whole generation, and too much brooding over them has produced another very marked development among our writers, i.e., the over-estimation of heredity as a factor in tragedy.

"Here," they say, "we have at last discovered the very roots of tragedy." And this discovery has done a great deal to ruin their art. In their eagerness for truth they have sacrificed truth itself and art along with it. For, as Huxley said, "in ultimate analysis everything is incomprehensible": you may, that is to say, be the cause of your child's temperament, but what caused your own, and that of your father and his father, and so on ad infinitum? Thus one can force the inquiry back and back till it ends always in the utter incomprehensibility of first causes. Character, in short, is something quite beyond explanation; except in a very limited sense its real mystery is unassailable.

By trying to do away with this mystery and "explain" everything, modern tragic writers have degraded their art more than they have any idea of. This failure of the modern method may be illustrated very fairly by trying to apply it to any of the Shakespearean tragedies. Thus, try to trace the madness of Lear to natural causes: analyze the unnatural natures of his two eldest daughters, trace it to a species of "alienism" inherited perhaps from Lear himself, whose mental condition must always have been unsound or it would not have broken down even under all the weight of his Conjecture how Cordelia troubles. came by her more normal mental equipment; trace it to a sounder physique, or show how she inherited it from a normal mother, or speculate as to whether she was a reversion to some far-off ancestor: account, in fact, for

the whole tissue and being of the great tragedy, and where is it? It has disappeared altogether, and only a laughable travesty of the alienist's note-book remains.

The same process may be applied to any of Shakespeare's plays with the same dire result. Trick out the sublime ardors of Antony and Cleopatra in modern dress, and you have only a study of the erotic temperament in woman, together with an analysis of the frailty of man, more or less disgusting. The whole spectacular splendor of life is destroyed by these analytical methods; just as (to use a hackneved but good metaphor) you destroy the beauty of a flower by picking it to It is true that the botanist pieces. knows more about the flower after this process of destruction; but for purposes of beauty we all prefer our rose entire. A great play, or novel, should not be a contribution to science but to art, and in forgetting this truth how many have erred! But unfortunately the scientific spirit is creeping more and more into our literature-it is so much in the air just now that apparently writers have to inhale it like the influenza microbe. Everything must be analyzed-the ingredients of character like the components of our foodaccounted for, explained, either by heredity or circumstance.

The tragedy of Circumstance has its ablest exponent in Mr. Thomas Hardy. Unlike Novalis, who held that character was Fate, Mr. Hardy seems to maintain that circumstance is Fate. This is the answer he gives to the old agonized questions—the same questions that tormented Sophocles and Æschylus, and will torment all thinking men till the world ends.

Tess of the D'Urbervilles and Jude the Obscure are both studies in Destiny—tremendous arraignments of the "well judged Plan of Things and their ill-judged execution." Everyone knows

the story of Tess. She is the sport of circumstance from her cradle to the gallows on which she ends her life; time and again the moment comes for some unseen intervention-and nothing intervenes; at each crisis of her story circumstance hounds her forward to destruction. When she is betrayed by D'Urberville there is no eye to pity, no hand to save: "Where was Tess's guardian angel"? our author asks, "Where was Providence? Perhaps, like that other god of whom the ironical Tishbite spoke, he was talking, or he was pursuing, or he was on a journey, or peradventure he was sleeping and was not to be awaked." And again he defines his view of things: "Nature does not often say 'see!' to her poor creature at a time when seeing can lead to happy doing; or reply 'here!' to a body's cry of 'where?' till the hide and seek has become an irksome outworn We may wonder whether at game. the acme and summit of the human progress these anachronisms will become corrected by a finer intuition, a closer interaction of the social machinery than that which now jolts us round and along; but such completeness is not to be prophesied or conceived as possible." We are in short, says Mr. Hardy, caught, all of us, in the wheels of the clumsy machine of circumstance, to be "jolted around and along" at its unintelligent will. This seems to be the peculiar problem which Mr. Hardy has set himself to solve, or rather to illustrate: that thinking, reasoning creatures should be made the sport of unreasoning laws. He has worked out one aspect of the problem in Jude the Obscure.

Jude is a man of bright intelligence and keen sensibilities. Born a working man he has all the ambitions of a scholar, but this is not where the tragedy comes in. Poor Jude is the predestined fool of his passions as well as of his circumstances. He marries,

miserably, the first woman who attracts him, and the story of their degraded intercourse is meant to typify the whole tragedy of sex. He meets, too late, his true love, Sue Bridehead, and there follow on this all the matrimonial confusions which have made Jude and Arathe book a by-word. bella, and Sue and Sue's husband, become almost laughably mixed up in the plot till it emerges again into unmistakable tragedy at the close. author has never lost sight of the end, though the reader may have done so, and he has been working up to the climax like all good writers. Jude has been divorced from Arabella and married to Sue by this time, and they have two children; they have also living with them Jude's child by his former marriage with Arabella:

The boy's face expressed the whole tale of his situation. On that little shape had converged all the inauspiciousness and shadow which had darkened the first union of Jude, and all the accidents, mistakes, fears, and errors of the last. He was their nodal point, their focus, their expression in a single term. For the rashness of these parents he had groaned; for their ill-assortment he had quaked; for their misfortune he had died.

Oppressed by the thought that "there are too menny of us," the boy hangs himself and the other two children, and thus rounds off, as it were, the misfortune of his existence. But Jude's miseries have still to culminate. leaves him, in a fit of frantic repentance, after the death of her children, and he is once more ensuared by the gross Arabella. Stupid with grief and fuddled with drink he returns to her, and at the same time renounces the will to live. He is dead before death, crushed by the pressure of laws which he cannot understand or fight againstgreat primal laws which urged him on and then left him to destruction. When at last the curtain falls on Jude as he

lies stark under the sheet, "straight as an arrow, the thumping that had gone on in his breast for nigh thirty years stopped at last," we feel tragedy could not go much farther. The book gives expression to the despairing thought of a whole doubting generation which hesitates to name life a boon. The accuser stands forth and challenges, with no uncertain voice, who dares and can to answer his charges. Look, he seems to say, at this man, this creature of a few unhappy years-with his aspirations of the God and his instincts of the beast! If an Individual Power made this illcontrived toy, such a Power must be either foolish or merciless; if impersonal Forces alone were at work, how shall we regard the process?-as an ugly joke to be laughed at with a wry face, or a calamity to be faced as best we may and endured only as long as we will?

It is not difficult to make out which of these views Mr. Hardy inclines to, and his influence may be traced through the great mass of modern tragical fiction-man the sport of circumstance, the fool of his own nature. These themes are worked out with every possible variation by hundreds of minor writers, who have the mistaken idea that by handling a big problem they write a big book. would do well to content themselves with smaller questions and leave Mr. Hardy to grapple alone with these weighty matters. These tragedies of circumstance are peculiarly depressing to consider, because, as I have pointed out, there is no possibility of intervention between a man and his fate if there is no deity save Circumstance behind things-if, in fact, circumstance is Fate. As good examples of this view of life, the novels of Mr. George Gissing may be considered. It is impossible to find more deadly depressing books; circumstance, probable

circumstance, is to him everything. No matter what a man is, he will be overborne by the force of circumstance, and moulded to its shape. It matters more to a man, according to Mr. Gissing, whether he is born rich or poor than whether he is born wise or foolish, good or bad. The gallant old tales of man, the conqueror, wrestling from a life the most inauspicious, all the gifts of fortune-these traditions of a credulous age are swept away like cobwebs by Mr. Gissing. circumstance are here the conquerors of man, who lies passive under their blows. What is to become of us if we adopt this view of life? larger, saner outlook is possible, and we may see that a power greater than itself is behind circumstance.

All the different tragedies-ancient and modern alike-which we have considered have involved a problem; but there is another form of tragedy, and that the highest, which involves no question, but is content simply to express the darkest side of human affairs. This is the Shakespearean method. The agonized questioning of man's destiny, so characteristic of ancient tragedy, is absent here: God is not, so to speak, called to account for the sorry happenings of life. Neither is circumstance omnipotent, nor heredity, after the modern tradition. characters, without any intervention of the author, or any explanations of any kind, explain themselves and their situation. The result of this simplicity of method is the consummate, matchless tragic note never struck before or since by any other writer. An illusion of reality is produced by it which can never be attained to by our modern scientific methods which research into character for generations back, and show each man the product of his conditions.

By none of these methods, but by the exercise of a tragic sense the most perfect possible, Shakespeare produced his incomparable tragedies. Certain of his scenes stab one to the heart exactly as the sight or hearing of such a scene in real life would do; and this because, rejecting the ancient tragic tradition which depended for its effectiveness upon situation alone, Shakespeare's tragic sense unerringly recognized that the passions of humanity were the beginning and end of the tragedies of the world:

In tragic life God wot No villain need be— Passions spin the plot,

as George Meredith puts it. That is to say, a life may be one long tragedy, and yet have no tragic "situations" in the ancient sense. It is true that Shakespeare's tragedies always have a tragic plot, but you will notice that the plot is not, as in ancient tragedy, the meaning of the play; it is quite subordinate to the characters. Shakespeare does not wish to tell a tragic storyhe wishes to describe men and women at a crisis of emotion. Here the old and new join hands instead of parting Nothing is more congenial company. to the modern tragic writer than the description of tragedies of Character. The fear is that nowadays this vein will be overworked; Shakespeare chose the great passions of the human heart for his character studies-remorse, cruelty, ambition, love, or hate; but some of our modern writers find the minor passions quite worthy of study. In this kind are the tender little tragedies of Jane Barlow and Mary Wilkins-chronicles of tiny griefs. petty sorrows, pitiful little disappointments, calamities of mice. These tales seem to exhibit the morbid sensitiveness of the modern mind, which makes so much out of little—sees tragedy everywhere.

The tragic sense, in fact, seems to be wearing thin with the lapse of the centuries, and there is a want of the old robustness of view among us. Like a river lost among sands, the stream of tragic literature is being broken up into thousands of rivulets and is losing the force of a current. Instead of one or two great writers who can, by giving their opinions, really contribute to public thought, we have crowds of minor authors whose opinions are of no weight, all confusing public thought by their strife of words. Each has his own tragic vein-the tragedy of want, or of intemperance, or disease, or lunacy, their numbers are endless; great subjects, all of them, if greatly handled, but that is seldom done. The tragedies of drunkenness alone would stock a library; but where is the epic among them all? It is seldom that one opens a modern novel without coming across some painful description of mania in its many forms; yet, again, where is the epic among them? One cannot help wondering why this should be the case; why, when a whole generation of writers is evidently keenly alive to the tragic side of life, there should yet be no great tragic writers among them-saving always Thomas Hardy.

Is there enough of acknowledged mystery in our modern work? Enough of the great, vague, infinite background which you find both in ancient and in Shakespearean tragedy—a background of the unexplained, the unknowable—the never-to-be-explained or known on this side the grave.

Jane H. Findlater.

The National Review.

THE MINISTERIAL CRISIS.

Seldom, if ever, has a political situation in England developed itself in a more severely logical and dramatic fashion than in the sequence of the resignations both of Mr. Chamberlain and of Mr. Ritchie upon the publication of Mr. Balfour's pamphlet. many of the readers of the Prime Minister's brochure, it must have appeared that, assuming it to represent the line of policy which, negatively and positively, the head of the Government intended, by its publication, to convey that he proposed to make the chief feature of the Ministerial programme, there was no place left in the Cabinet for the chief exponent of Imperial preferentialism on one side, any more than for an uncompromising Freetrade Chancellor of the Exchequer on the other. Not more clearly do the "Economic Notes" by their whole train of argument point towards fiscal retaliation, than by their silence they rule out duties on foreign corn as a practicable policy. Yet no one really expected that both resignations would take place, and the balance of opinion seemed to be that, while some convinced and pronounced adherents of economic orthodoxy would probably feel bound to leave the Cabinet, it might be expected that the Colonial Secretary and the Prime Minister would work on together, if on somewhat detached lines, for the common end of a revision, not to say reversal, of our established fiscal system. Such a view was frankly avowed only on Wednesday by Mr. Vince, the organizing chief of the Birmingham Tariff Reform propaganda, who welcomed Mr. Balfour's pamphlet as well calculated, if not directly to further Mr. Chamberlain's preferential schemes, yet to perform the useful function of

helping to dissolve the mass of prejudice by which Customs duties on foreign, for the benefit of colonial, foodstuffs were so formidably opposed.

Mr. Vince's view of the value of the co-operation of Mr. Chamberlain and Mr. Balfour was plainly associated with the anticipation that they would remain members of the same Government. But, in fact, a week before he spoke, the bolt had fallen, and the Colonial Secretary had sent his resignation to the Prime Minister. sons for that step, as explained in his letter of September 9th, published yesterday, are, first, that he recognizes that for the present the popular judgment has been declared decisively against a preferential agreement with the colonies involving "any new duty, however small, on articles of food hitherto untaxed, even if accompanied by a reduction of taxation on other articles of food of equally universal consumption," and, secondly, that he himself could not with credit remain in office, accepting the exclusion of such scheme from his political programme.

The Government, he holds, are not pledged to his policy in this matter, and, therefore, will suffer no discredit by accepting the clear evidences which have been afforded of the present condition of public opinion on the subject. No such manifestations of hostility, in his view, have been directed against "the other branch of fiscal reform, which would give a fuller discretion to the Government in negotiating with foreign countries for freer exchange of commodities, and would enable our representatives to retaliate if no concession were made to our just claims for reciprocity." Mr. Chamberlain, therefore, encouraged Mr. Balfour to

pursue in office, with all the colleagues he could retain, those lines of "fiscal reform," and promised him his loyal assistance from outside, where the retiring Colonial Secretary hopes to be able to pursue his own special policy with possibly greater effect than if he had remained a party leader. Mr. Balfour, in his reply, accepts Mr. Chamberlain's reading of public opinion as regards the policy of Imperial fiscal preferences. The times, he recognizes, are clearly not ripe for pushing it forward, while he agrees with Mr. Chamberlain that the "other branch of fiscal reform to which we both attach importance," may even now receive unprejudiced consideration from the country. He, of course, deeply regrets that Mr. Chamberlain should not feel able to remain in the Cabinet; but he does "not venture, in a matter so strictly personal, to raise any objection" to his distinguished colleague's decision, and while recognizing the greatness of the loss to the Government, thinks that the gain to the cause of Imperial unity may be greater still.

Of course, this passage in political history is, before all, an emphatic tribute to the strength of the feeling which prevails in the country against any kind of fiscal changes which could conceivably have the effect of raising the cost of living for the poor. But striking, and in a sense complete, as is the success of that body of opinion which has availed to make Mr. Chamberlain's office untenable, we are by no means inclined to think that the success can be regarded as decisive. On the contrary, as it seems to us, the real danger to the existing fiscal system of the country is enhanced by the division, and the postponement of part, of the contemplated attack on that system, and by the tactics which its principal assailants propose to pursue. The practical arguments against fiscal retaliation, though no less inherently

cogent than those against preferential duties, of which food-taxes must, from the nature of the case, be prominent features, are not such as appeal so directly to the mind of the masses, or even of many educated persons. idea of hitting back at the foreigner, and particularly the German, who is making himself disagreeable by his tariffs, is very congenial to the British mind, and some serious exercise of intelligence is required to recognize that, in truth, fiscal retaliation means hitting oneself on the other cheek. There is, therefore, truth in Mr. Vince's view that the propaganda of retaliation may serve to disintegrate some of the economic "prejudice" which stands in the way of the policy to which Mr. Chamberlain is specially committed. Further, the latter policy will, in all probability, gain appreciably from the enhanced prestige which will attach to its leading advocate through his resignation of a post which he has undoubtedly filled with great distinction. At his time of life such a sacrifice cannot be lightly made, and even those politicians with whom aversion to Mr. Chamberlain has become almost fanaticism will hardly be able to represent his resignation as showing anything so clearly as that he cares for what he conceives to be the interests of the Empire more than for power and We do not doubt it, and though we are unable to believe that any sure Imperial consolidation is to be attained on the lines of preferential tariffs, we cannot shut our eyes to the fact that in the advocacy of his dangerous specific he will gain, by having resigned, a reputation for disinterestedness.

On the whole, therefore, the defenders of the Free-trade system will be constrained to bestir themselves even more actively than they have done so far, and by no means to rest content with the fact—impressive as it is—that

within five months of the announcement of his desire to carry out a counter-revolution in our fiscal system, undoing the work of the middle of last century, the most powerful statesman of our day is out of office. Such is doubtless the view of Mr. Ritchie and Lord George Hamilton, who have felt constrained to dissociate themselves at once from a Ministry which is pledged by its chief to a policy of fiscal retaliation. It is surprising that they have not been accompanied into retirement by the Duke of Devonshire,

whose adherence to the economic principles in which he was brought up has been in the past noteworthy and effective. If it should prove to be the fact that he has accepted the argument of the "Economic Notes," the position of the Government will, no doubt, be less precarious than if he had realized the general expectation; but it is difficult to imagine that it can carry on for any length of time with credit and success after the singular circumstances of the disruption of the present week.

The Economist.

FRESH FIELDS FOR PHOTOGRAPHERS.

In these days of "snap-shotting," when the skill of exposing a plate is reduced to the mere act of pressing a button, it is good to know that there lies within reach of every amateur a field for his labors wherein he may press his button to some advantage.

If he would live down his soubriquet of "camera fiend," he must certainly find some other incentive to work than that of lavishly "potting" harmless citizens and multiplying villascapes. Little profit comes of doing to-day what thousands did yesterday and what thousands will do to-morrow, and even that little goes to the dealer and the manufacturer.

The young man in the street uses his camera as wantonly as he would use a catapult or an air-gun in the back garden. Should he grow out of such barbarity, his racial instincts for sport are partly satisfied by the perpetration of family groups. Every one knows those groups. They are all alike, with their front row of large feet and back row of small faces, and their background thrown far away behind by a violent perspective.

Instead of filling albums with such

records, the amateur may, if he will, spend less money, achieve more informing results, and satisfy at the same time, and in a real way, his love for sport. He may betake himself to woods and meadows. The exercise will improve his health, and the practice of a sharp look-out will increase his store of natural facts. There, his pictures will be freed from the natural monotony and ugliness of suburban surroundings. Having a definite aim, he will be careful not to cheapen his hobby by valueless exposures. pictures will be fewer, but each one will be worth more than countless back-garden "shots." All this is possible to the photographer who is willing to submit himself to the charm of a naturalist's life and become a minor Gilbert White.

The photographic work of the brothers Kearton, of Pike, Lodge and others, is well known and much valued. These energetic and resourceful men have directed their attention for the most part to the wild birds of this country, but another naturalistic photographer has now arisen who has made it his business to catch the smaller mammals,

the reptiles, fish and insects amidst their true surroundings and in their characteristic attitudes. This gentleman—Mr. Douglas English—has written a quite delightful book upon his own aims and efforts, and in it he makes clear the difference that exists between the "stalking" photography as practised by the Keartons, Lodge and others, and his own methods, which he terms "photography of natural objects by control."

The more exciting class of work is probably the former, where all sorts of disguises have been resorted to for the purpose of hiding both camera and operator from the quick glance of shy birds. Mr. Lodge has already made it possible for a heron to photograph itself by treading upon a spring that releases a shutter, the human operator being far away and otherwise engaged.

The methods of Mr. English are, however, not so elaborate. Instead of stalking he brings the camera to the This of course implies that his sitters are for the most part small enough to be easily handled. In photographing a grasshopper, for instance, he tells us that he selected a tall grass stem, focussed it, then caught a grasshopper and placed him upon it, where he "looked pleasant and kept still" whilst the exposure was made. A dormouse was secured young and then tamed. In Mr. English's picture of him the softness of the fur and the brightness of the eyes of the little fellow are marvels of lighting and exposure.

The Great Bat, Small Bat, Hedgehog, Mole, Shrew, Water-shrew, Fox, Stoat, Weasel, Badger, Otter, Squirrel, Dormouse, Wood-mouse, Field-mouse or Vole, Common Mouse, Brown Rat, Water-rat or Vole, Hare and Rabbit, are twenty species, says Mr. English, of which not more than a dozen can be said to be so common as to be seen without the trouble of looking for them, whilst the number of those which one can expect to see by daylight, as opposed to twilight or moonlight, can be counted on one hand. For this and many other reasons he almost invariably employs time exposures. His camera is of the simplest type, and all his success appears to be due to knowledge of his subject, to neverending patience, and to ready resource.

It appears that the bicyclist or the occupant of a drifting canoe are the most likely to be fortunate in finding subjects, since their method of progression is at once noiseless and almost actionless.

For the portrayal of fishes and some kinds of reptiles it is of course necessary to have some sort of receptacle wherein the subject can be confined in its natural element during exposure.

The stoat, weasel, squirrel, and water-vole, particularly the latter, are the easiest to get close to. Bats are easily procured, and being in day-time more than half asleep, are not troublesome subjects. "The pipistrelle," says Mr. English, "was one of several who selected the dinner-hour during hot weather to enter the room by the open window. He was secured in a butterfly-net, and spent the remainder of the night in a Bryant and May's match-Morning found him so sleepy box. that several pictures were secured of him in various attitudes, including the typical head-downwards pose."

All animals, when not in action, have one or two characteristic attitudes which may be said to be typical, and it is for the occurrence of these that the photographer should wait. At such times the creature is free from apprehension and constraint, and is therefore not likely to move for an appreciable time. It is also part of the business of life of some animals of prey

to remain absolutely motionless for a very considerable time-the toad, for instance. The heron will likewise stand for an hour with its feet in the water as if he were already stuffed objectively, and not actually attempting that process subjectively. It is surprising how often, by the exercise of a little patience and foresight, fairly long time exposures may be made upon animals that, in the popular uninformed mind, are of the most volatile In cases where the subject has to be first caught or handled, as in the case of insects or the smaller mammalia, it frequently remains still after being placed in position-awaiting further developments of the situation, so The photographer will, to speak. moreover, soon come to recognize the settling down operations that precede the long spell of the characteristic attitude.

In the case of the more active and dangerous kinds, the sitters must of course be first secured and then im-Mr. English, in his book, prisoned. gives particulars of a kind of cagestudio, invented and made by himself. It is a large packing-case, lined with plaster of Paris in a rounded manner to avoid rectangular corners. Each end of the case has a hole to admit the Two pieces of heavy glass, contrived to join up or slide apart, form the lid, and a third drops perpendicularly between them. The box is filled with sand, stones, moss, plants, or whatever makes the natural environment of the creature. Should be, after being introduced, be frantically wild, he is left to calm down and feel more at home. It may be necessary when photographing to push the perpendicular partition of glass towards him, so as to restrict his movements. Mr. English's attempt to take a picture of a brown rat in the first experimental studio of this sort is like a chapter out of Mayne Reid, so full is

it of adventure and the cunning of both parties.

To anglers, or the friends of anglers, the photography of fish may be a more easy accomplishment. Before the advent of photography it was scarcely possible to know what a live fish actually looked like. Dead, dying, or, worse still, stuffed specimens were the only models available to draughtsmen, who were, moreover, not at all times careful about minor details. To this must be added the fact that it was all but impossible for them to render with any accuracy the true shape and contour of a fish in the water, for the obvious reason that there would rarely be time to make more than a rapid sketch of a specimen moving about in an aquarium. A change in the shape of a fish takes place immediately upon its removal from the water, and continues until the stages of death and corruption are reached. When one thinks of the care and length of time expended on the laborious drawings for natural history illustrations of past days, it is easily imagined how far they must have been from a living presentment. A further evil exists in the fact that, the original drawings and engravings being very costly, mechanical reproductions of them have been borrowed again and again for illustrations of similar works.

By photography the fish is portrayed at the river-side or on board ship. An air-tight tank made by clamping a piece of glass each side of a rubber tube lying in a U-shape constitutes the only necessary appliance. It is filled with water taken from the same source as is the fish itself. It must be wide enough to give the subject room enough to swim, and must be screened from distracting reflections upon the glass. Carefully and delicately handled, the fish takes no harm, though a prolonged sitting may occasionally bring on exhaustion, in which case he is supplied with fresh water or put back to his own home, or he may be revived by a few drops of brandy added to the water.

Domestic pets, sheep, or farm-yard occupants—all these offer no real difficulty. Success depends mainly upon points of ordinary technique, with which this article does not deal; but not a little upon skill, dexterity and adroitness in catching the characteristic pose and securing an environment free from anomaly and solecism.

With regard to the wild varieties at large in the country, it will be found advantageous to take the human inhabitants into friendly confidence. By eliciting the experience, the information and the assistance of those who

Leisure Hour.

have seen the hunted dumb animals all their lives, much time will be saved and much disappointment avoided, whilst results will be fuller and finer.

Can any one conceive a hobby more informing, more engrossing and more profitable? Every record, however humble, is of appreciable value. Naturalistic photography is indeed a fresh field, having novelty of the most exhilarating kind, to wit, the breaking of new scientific ground. The wonderful and beautiful examples exhibited at the New Gallery during the Royal Photographic Society's exhibition are sufficient evidence of the importance of this branch of the art and of the appreciation it is duly winning.

F. C. Tilney.

BOOKS AND AUTHORS.

A second-rate hotel, the refuge for poverty that "has seen better days," but held in contempt by the social magnates of the small inland town where it is placed, is the scene of Ruth Hall's novel, "The Pine Grove House." Three love-affairs, a financial irregularity and a vaguely-hinted scandal, make a complicated and rather confus-Considerable skill is shown ing plot. in the drawing of some of the characters, especially the feminine types, but the story as a whole is more readable than satisfactory. Houghton, Mifflin & Co.

The writer who has won so many hearts as "the author of 'Miss Toosey's Mission'" now signs her full name, Evelyn Whitaker, to her latest book. "Gay" is the story of a winsome little English lad, orphaned in London by the death of his brave young mother, be-

friended by one of her fellow-lodgers, and finding his way at last to the quiet country home which her runaway marriage had left desolate. The outline is simple and obvious enough, but the details are charmingly filled in, and the effect on the reader is restful and refreshing. Little, Brown & Co.

In his new novel, "Eleanor Dayton," Nathaniel Stephenson makes a decided advance on "The Beautiful Mrs. Moulton." He writes with the same fluency and command of decorative detail, and his background is still southern Ohio, but his figures are more lifelike and his whole atmosphere more exhilarating. Eleanor Dayton is the beautiful and high-minded daughter of an old Southern family, her romance is the centre of interest, and her two rival lovers are a remarkably attractive pair. The easy, opulent life of

the period just before the War is well portrayed, and the stirring scenes that follow are in effective contrast. The story is readable and wholesome, and will be popular. John Lane.

The adherents of "Christian Science" are fortunate in having Clara Louise Burnham's facile pen enlisted for their propaganda, and her second purpose-novel shows a marked improvement over the first from the artistic point of view. "Jewel," the childish heroine from whom the story takes its title, is a simple-hearted, loving little girl, and her experiences in the ill-assorted household of her cynical grandfather may interest even those sceptical readers who attribute the transformation there to her winning ways rather than to her "treatments" and "handling claims." Like most argument cast in the form of fiction, this is better adapted to confirm believers than . to convince doubters. Houghton, Mifflin & Co.

Bradford Torrey's out-door books are always full of whimsical, unexpected turns, clever analogies between animal and human nature, and epigrammatic fads, which comment on current make them delightful to readers who would never think of taking up an ordinary "bird book." But in his latest volume, "The Clerk of the Woods," he falls now and then into a vein of sentiment and reminiscence which adds a mellow charm scarcely felt before. Descriptions like those of the mower with his scythe, or the tramps bending over the bridge to watch the brook, are really exquisite in their simplicity, though one knows well enough that only a rare combination of insight, sympathy and artistic skill could have produced them. Houghton, Mifflin & Co.

Writing of the country of Robert Louis Stevenson in the Pall Mall Magazine, Mr. William Sharp gives this striking description of Stevenson's appearance when he first met him, on the platform at Waterloo station:

He was tall, thin, spare-indeed, he struck me as almost fantastically spare: I remember thinking that the station draught caught him like a torn leaf flowing at the end of a branch. His clothes hung about him, as the clothes of a convalescent who has lost bulk and weight after long fever. He had on a jacket of brown velveteen-I cannot swear to the color, but that detail always comes back in the recalled picture-a flannel shirt with a loose necktie negligently bundled into a sailor's-knot, somewhat fantastical trousers, though no doubt this effect was due in part to their limp amplitude about what seemed rather the thin green poles familiar in dahlia-pots than the legs of a human creature. wore a straw hat, that in its rear rim suggested forgetfulness on the part of its wearer, who had apparently, in sleep or heedlessness, treated it as a cloth cap. These, however, were details in themselves trivial, and were not consciously noted till later. The long, narrow face, then almost sallow, with somewhat long, loose, dark hair, that draggled from beneath the yellow straw hat well over the ears, along the dusky hollows of temple and cheek, was what immediately attracted attention. But the extraordinariness of the impression was of a man who had just been rescued from the sea or a river. Except for the fact that his clothes did not drip, that the long black locks hung limp but not moist, and that the short velveteen jacket was disreputable but not damp, this impression of a man just come or taken from the water was overwhelming.

BAUDELAIRE.

A Paris gutter of the good old times, Black and putrescent in its stagnant bed,

Save where the shamble oozings fringe it red,

Or scaffold trickles, or nocturnal crimes.

It holds dropped gold: dead flowers from tropic climes;

Gems true and false, by midnight maskers shed;

Old pots of rouge; old broken phials that spread

Vague fumes of musk, with fumes of slums and slimes.

And everywhere, as glows the set of day,

There floats upon the winding fetid

The gorgeous iridescence of decay:

A wavy film of color gold and fire
Trembles all through it as you pick
your way,

And streaks of purple that are straight from Tyre.

Eugene Lee-Hamilton.

THE PARTING OF QUEEN AVERLAINE AND THE KNIGHT ARKELD.

Averlaine:

Yea, we must part; and tear with ruthless hands

The golden web wherein, too late, Love strove

To weave us joy, and bind us heart to heart.

Arkeld:

Yea, we must part; and strew on desert sands

Petal by petal, all the rose of Love; And part, for ever, where the cross ways part.

Averlaine:

Yea, we must part; and never turn our eyes

From strange horizons, desolate and far,

Though love cry ever: "Turn but once, sad heart!"

Arkeld:

Yea, we must part; and under alien skies,

Must follow after some cold gleaming star,

And rove, as north and south wind rove, apart.

Averlaine:

Yea, we must part; ere Love has grown too strong

And we too helpless to resist his might;

While each may go with pure unshamed heart.

Arkeld:

Yea, we must part; and though we do Love wrong

He will the more subdue us in our flight,

And hold us each more surely his, apart.

Wilfred Wilson Gibson.

The Pilot.

THE TREES.

I was once a Dryad, long ago:
In the trees I love I held my house.
Then I read the writing on the stems,
Then I understood the singing boughs,

Still, because I was a Dryad once, Is for me the leaves' song half revealed;

Still my spirit hears the forest prayers, Knows the dreams the sleeping branches yield,

I can hear, for I was Dryad once, Through the storm, the trees in battle call;

Faint and far my spirit seems to hear All the trees in all the forests fall.

Ah, I was a Dryad long ago:

Naught I knew of sorrow, naught of fear:

For the gladness that my heart knew there

Still I hold the singing branches dear.

Ethel Clifford.

The Sketch.